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THE
CANADIAN HORTICULTURIST,

PUBLISHED BY THE

FRUIT GROWERS' ASSOCIATION OF ONTARIO.

VOLUME IV.

T M Benson

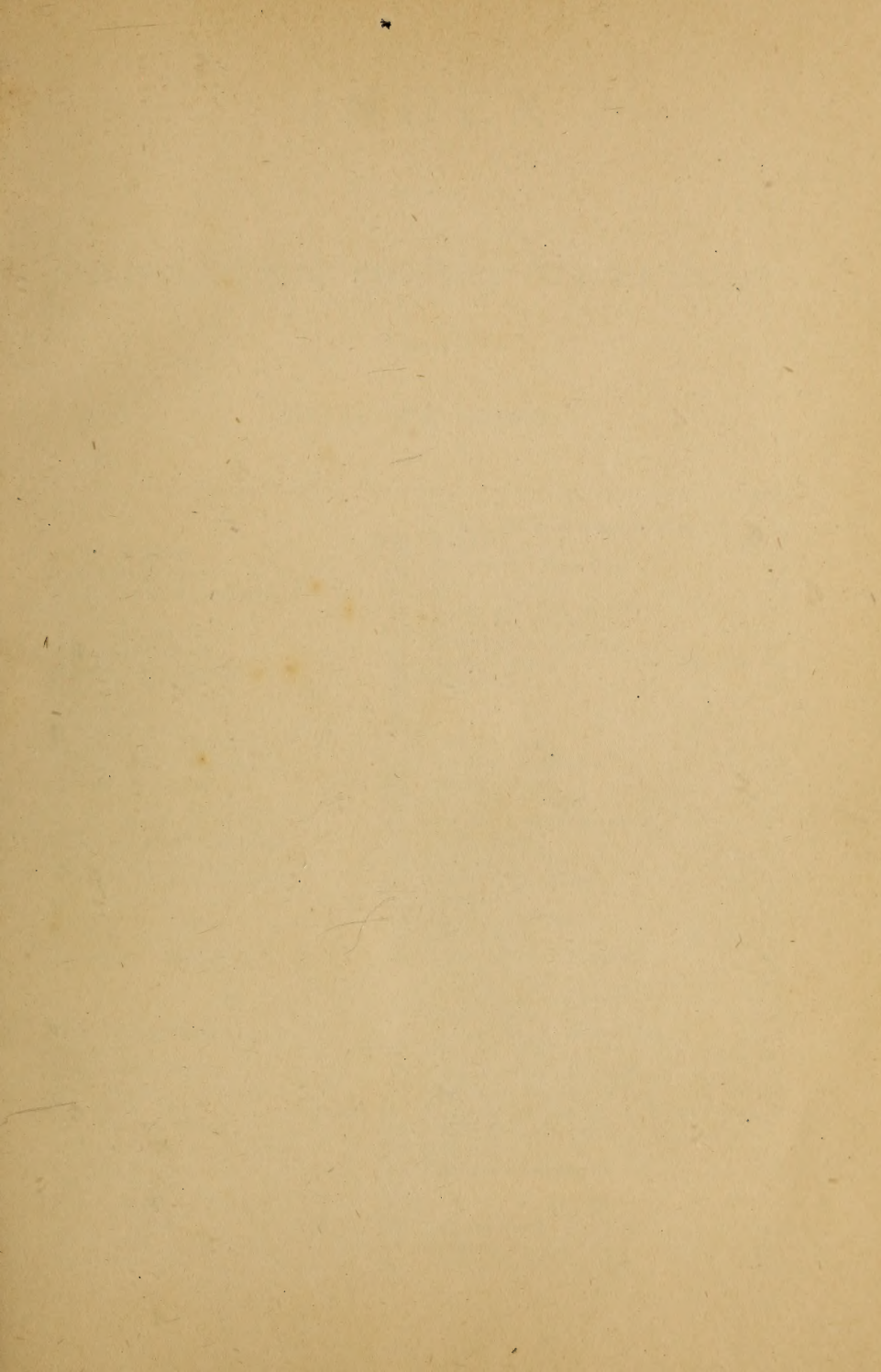
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JANUARY, 1881.

[No. 1.

HOW OUR NEIGHBORS DISPOSE OF THEIR APPLES.

Having occasion to visit the City of Rochester in the interests of the CANADIAN HORTICULTURIST during the past month, the opportunity was improved by making some inquiry into the disposition of the large crop of apples harvested the past season. There has been an unusually large yield of apples in the vicinity of Rochester, and we expected to hear that a great many bushels had gone to waste because there was no method whereby they could be turned to account. But such was not the case. A good market had been found in the cities for all the really sound first-class fruit at fair prices. Then the evaporators had bought up all of the next grade and prepared them so that they would keep for an indefinite length of time, diminished in bulk and weight so that they can be easily transported. And last of all the Cider Company had bought up all the rest, so that there was not an apple of any quality, good or bad, that had not found a market.

The Reports of the Fruit Growers' Association having very fully described the process of evaporation, and given exhaustive accounts of the products and their use, it was decided to spend the time at command in visiting the works of the Duffy Cider Company. The main building of this manufactory is one hundred and twenty by two hundred feet, in which are the steam engines that supply the power, the mills for grinding the apples, the presses for extracting the juice, and the vats in which the cider is filtered and clarified before being barreled for market. The building in which the apples are received is of two stories, and at present only three hundred feet long, but being extended two hundred feet, so that when completed it will be five hundred feet long. Into the second story the apples are unloaded from the cars, in which they are brought from a distance; and the first story receives the apples brought by the farmers from the adjacent country. The mills, there are two, are capable of grinding

each a thousand bushels per hour, so that with one set of hands they can work up ten thousand bushels per day. The yield is about three gallons and a half to the bushel of apples taking the average of the season. Each press takes one hundred and ten bushels of apples to a cheese, and about forty minutes is consumed in the pressing of each cheese. During the past season they had used up about five hundred thousand bushels of apples, all of which were of no value for any other purpose, not being good enough for the evaporators. The apples had cost them about fifteen cents per bushel, averaging to the grower this year from ten to twelve and a half cents.

This year the farmers got fifteen cents per bushel for apples that were good enough to use in the evaporators, but this was a season of great plenty and prices ruled low. Usually they get for such fruit about twenty-five cents per bushel.

The cider manufactured by this company is mostly clarified by filtering through sand of a peculiar character, which is brought from Massachusetts, and after being prepared for market will keep without change the year round. It is retailed by them at two dollars per barrel of thirty-two gallons, and sold at wholesale at one dollar and twenty-five cents.

After the cider has been pressed out, the pomace is saturated with water and left to ferment, and when this fermentation has reached the proper point it is again pressed, and the product made into vinegar.

To what uses this cider is put after leaving the factory is matter for conjecture. Doubtless much of it is used in the manufacture of wines of various sorts, most prominent among which are the various sparkling wines that are so much sought after in the American market. Some of it is probably distilled and made into beverages of a more potent character.

If these methods of using up inferior apples become general, it would seem that the temptation to barrel apples of poor quality should be much lessened, and we may hope to see only such as are strictly sound and of first quality sent to market in the fresh state. It is trying to the producer to sort his apples with the proper care, when he knows that all that are not marketed in the barrel are of no money value to him; but when he knows that there is a market for every one, even the very poorest, and that unless his barreled fruit is put up with the greatest care it will bring but a poor price, then he will

not be so anxious to get rid of his apples as to spoil the price of his barreled fruit.

Another result from this clean consumption of all the apples will doubtless be a very great reduction of the codlin moth; for every apple being removed from the orchards, and the wormy fruit in particular subjected to these processes of manufacture, the insects will be taken to factories and there so severely handled that most of them will perish. Is there not in this a more sure and universal trapping of the codlin moth than would be effected in a century by the scattered use of bands of paper or cloth or any other of the traps that have been devised for lessening their numbers? Should this result follow, there will soon be an abundance of perfect fruit, free from the excavations of these little pests, to gladden both producer and consumer.

THE BUSH HONEYSUCKLE.

Honeysuckles we generally think of as climbers. Their rich, shining, glossy leaves, and in many cases, sweet sented flowers, are seen clustering above the eaves of every cottage by the wayside. No plant is more generally healthy, and none bears with less injury the rigours of the most trying exposures. *Lonicera* is the botanical term applied to all honeysuckles, but under the term are included forms that are as far removed from a climbing vine as any shrub. These forms of honeysuckles are genuine shrubs, not climbers artificially trained into shrubs after the method often applied to wistarias and trumpet creepers. They have every attribute of a shrub, and some of the best attributes developed in a high degree. These attributes are naturally shared in nearly equal degrees by both climbers and bushes of the genus *Lonicera*, and they consist largely in extreme hardiness and vigor or growth. In the roughest, most exposed positions by the seashore, or on bleak hillsides, may be seen in the thriftiest, healthiest condition, honeysuckles of all kinds, and particularly those called fly honeysuckles or bush honeysuckles, *Lonicera* or *Xylosteum*. It is true the habit of the bush honeysuckle is a little coarse, but it is so vigorous, and such a lively green throughout the season until late fall, that one forgives it a little want of fineness of nature.

Their flowers are not specially conspicuous, but always pleasing, ranging in the several species and varieties through many shades of white, yellow, pink and red. There are at least fifty species and varieties known in collections, and among them is considerable variety of color and form, although the general appearance of all bush honeysuckles is much the same. All have good-sized, bright green leaves, quite distinct from those of the climbing honeysuckle, but the general appearance of the leaf and size of the flower is much the same. The different species come from widely diverse

regions of the temperate zone, from both Europe and Asia. One of the very finest, *L. fragrantissima*, with white petalled and yellow stamened flowers, early bloom and vigorous habit, was introduced from Japan a little more than thirty years ago, while *L. alpigena* and *L. cœrulea* have been mentioned and more or less employed for nearly 400 years. The best known in gardens of the present day are the red and white Tartarian honeysuckles *L. xylosteum* or English fly honeysuckle, *L. ledebouri* and *L. canadensis*. The flowers of the last three are yellow or yellowish brown; and *canadensis*, more inclined to climb than other bush honeysuckles, is specially noteworthy for leaves of a beautiful silvery-grey color.

But honeysuckles have another charm in their fruit or berries, that cannot be praised too much or too often. All through August and September these berries stand in small, thick clusters on the ends of the stiff, upright branches. They are red or orange, and very effective, especially as shrubs with ornamental seed vessels are none too plenty. The positions that bush honeysuckles should occupy on the lawn are within the outskirts of the group, among the more massive and less refined shrubs.

Bush-honeysuckles cannot be fairly classed among the most beautiful deciduous shrubs, yet their vigor and general hardiness are so excellent, their flowers in spring, in many species, so sweet, and the foliage of such a bright, attractive green, that no lawn, and scarcely any considerable shrub group, can afford to neglect their charms. After this assertion I need hardly say that bush honeysuckles receive too little employment at present.

—*S. Parsons, Jr., in Country Gentleman.*

MOSSING THE SURFACE OF POTS.

Covering the surface of pots with moss is very beneficial, as well as enhancing to the appearance of the plants. A good many kinds of succulent growing plants during their season of rapid growth require when growing in pots a great quantity of moisture at the roots. This is the case with such kinds as carnations, bouvardias, heliotropes, geraniums and roses, especially if grown in a house heated by artificial means, and a minimum of 50 degrees maintained. A good many failures with roses during winter are caused by not supplying sufficient water to the roots when growing. For years I made this mistake myself, but as we are daily learning the nature and requirements of plants better, I find that too much water cannot be given roses growing in a high temperature, having plenty of healthy foliage, so long as there is sufficient porosity in the soil to prevent saturation. Dryness at the roots is often the cause of mildew on plants, and is also the cause of the plants producing imperfect buds. I have seen a house of roses in strong, succulent, healthy growth, allowed to get dry at the roots (not sufficient to cause the shoots to wilt, but enough to check the rapid circulation of the sap in the shoots,) to be covered with mildew a short time after, and the cause laid to injudicious airing or to extremes of temperature, when insufficient moisture was the real cause. I do not say but that mildew arises often from injudicious airing and firing, but I do assert from observation that it also often arises from injudicious watering.

Now, for the purpose of helping avoid this evil and maintaining a better degree of moisture at the roots, during a period of severe weather when strong fires have to be kept up to maintain the required temperature, it is a good plan to cover the surface of the pots, or if growing in shallow benches, the surface of the bed, with moss, which may either be the green moss found growing on stumps and stones in moist parts of woods, or sphagnum moss found in swamps; this latter is the kind I generally use, but the other is the prettiest for house plants. Peter Henderson recommends mixing bone dust with the moss as a fertilizer to the plants. For plants somewhat exhausted from being a good while in pots, this is very desirable, and for the last year during which I have adopted this plan, I found it very beneficial for recuperating plants which make feeble growths from being long in pots. The moss, from its moistness, brings the roots to the surface, and if food is supplied them, a fresh and vigorous growth is the consequence.

Instead of mixing the bone dust with the moss, I often mix it with a little soil, and sprinkle it on the surface of the pots before putting on the moss. This is the better way with house plants, as it keeps the bone covered, and therefore prevents any disagreeable smell from arising. Fertilizing house plants has generally been a difficult matter with window gardeners, but the above method overcomes most every objection formerly met with, and will be found as beneficial as any method generally recommended.

All my bouvardias, heliotropes, roses, and other plants growing in pots for winter flowering, I had covered shortly after placing them in their winter quarters—the result being more flower, larger trusses and buds, and I think better colored, than when grown without any covering on the surface.

—*M. Milton, in Country Gentleman.*

THE MANUFACTURE AND USES OF GRAPE SUGAR.

We clip the following article from the *Breeder's Live Stock Journal*, and ask, if the manufacture of glucose or grape sugar is so profitable, what is there that prevents its manufacture in Ontario, to the benefit of the producer of the corn and the consumer of the sugar, and the establishment of another home industry. The manufactory that consumes two thousand bushels of corn per day, or about six hundred thousand bushels a year, would help to steady the price of corn. The article is as follows:—

Not long since Mr. John L. Alberger, of Buffalo, N. Y., one of the original inventors of the process of making glucose and grape sugar, brought suit for \$450,000 against the Buffalo Grape Sugar Co. Mr. Horace Williams who, it is claimed, understands the question thoroughly, testifies as follows in that suit:

"The manufacture of grape sugar from corn was commenced originally by Williams and his partner. He invented some of the machinery by which the process was brought to perfection. He obtained patents in order to keep his process a secret. Their firm name was then A. W. Fox & Co. They commenced with two or three hundred bushels a day, and increased this amount gradually to two thousand. This was the amount in 1874. The Buffalo Grape Sugar Company was then organized. There were two hundred shares, of which Fox owned 102; witness owned sixty shares, and the balance was held by William Hamlin. Improvements have since been made in the machinery, by which a better article of sugar is made and with greater facility. They first produced a crude sugar—used in the manufacture of ale and lager beer, principally ale. The sugar was used in the place of malt. At a later date they refined the sugar. Grape sugar was also used in 1874 by tobaccoconists. As its quality was improved it was used in other branches of business. A large quantity is now used in making sirups for table use. Witness knew there was very little pure cane syrup sold now. The grape sugar is more wholesome and delicious. Glucose and grape sugar are one and the same thing—glucose being the sugar in liquid form. When it is called grape sugar it is in a solid form. This is being used considerably in New York in mixing sugar, making what is called improved sugar. Witness understood that the Buffalo Grape Sugar Company was interested in this mixing of sugars in New York. At the present time the demand for grape sugar exceeds the supply, and the price of it has increased. In 1864 thirty pounds of sugar were made from one bushel or fifty-six pounds of corn. The price was then from $3\frac{1}{2}$ to 4 and sometimes $4\frac{1}{2}$ cents a pound. The refuse is sold as feed, and the price of it was from 7 to 8 cents a bushel. In mixing sugar the grape sugar is pulverized and about twenty-five per cent. added to cane sugar. It improves the color of the sugar, and enables dealers to sell it for a better price.

During 1874 and 1875 the earnings were about \$15,000 a month, and in 1876 they averaged from \$19,000 to \$20,000. In 1878 the earnings for one month were \$35,000. Witness did not see many statements during 1878. A starch factory was run in connection with the sugar works, about 500 bushels of corn being used each day. Witness did not know about the earnings of the starch factory. He was aware that the business was profitable. He understood all of the process of the establishment and had charge of the manufacturing of the sugar, glucose, etc. He made estimates from time to time of the cost of turning a bushel of corn into sugar, and in doing so took into consideration the outlays, cost of machinery, buildings, etc. He estimated it to be about twenty-five cents per bushel, and the net profit of a bushel of corn at forty five cents a bushel, when turned into sugar, to be seventy cents. A number of small manufactories have sprung up in this country, but there are only four or five of any account. The amount of corn consumed in 1879 was from 4,000 to 6,000 bushels a day. In some respects it costs less per bushel to run a large amount of corn than it would to consume a small quantity. The net profit per bushel from 1874 to 1879 was from 40 to 50 cents."

EARLY GRAPES AND ENEMIES.

"Bees don't cut grapes." Don't they, though? I have known grapes ever since the days when the York Maderia, the Isabella and the Catawba were the only sorts out, and these only very little disseminated, but I have never had them injured, as by bees or wasps, until this season. I first noticed the depredation going on over some fine bunches of Iona which were growing on a frame between Concords. I covered these with paper bags and so secured them; but the bees went on along the frame of Concords and soon there were I and X shaped slits cut on the ripest berries of nearly every bunch, and crowds of bees buzzing and sucking and bearing off the juice. A very few wasps were participating, and in one place some ants, and I was troubled to find who began it, who made the first cut, much as one is over the asseverations of a set of boys who have been conjoints in a piece of mischief. The ants and wasps have been here through all the fifty years of my experience, and never were known to do such things; neither have our common bees. But the bees at work here were the ring streaked with yellow Italians, and although I cannot see well enough to make out how they snip the grape with a cut just like that of a can-opener, I believe they do it. It is somewhat singular that other Concords on a higher frame have not been touched, nor any other sorts near, since we cleared the frame first attacked and used what fruit was left to make syrup and marmalade.

As to *earliest grapes*, the downy stout wood of the Champion makes it seem to be a seedling of the Hartford. Both fruit and bunch are small, and the quality is less than tolerable. But it does not drop as Hartfords are so apt to do. I have a grape called the Paxton, which resembles the Hartford in every particular of vine and fruit, is evidently of the same strain, and would appear identical with it, only that the fruit hangs well, becoming very tender and rich when Concords are entirely ripe and passing their prime. If the Creveling would fertilize so as to have complete bunches, uniformly, it would be the best earliest grape among all here, (Central Pennsylvania.) It also hangs well and attains a very delectable flavor. All things considered, we count the Worden our best earliest.

—W., in *New York Tribune*.

A SPLENDID EARLY PEAR.

Petite Marguerite is one of Mr. Andre Leroy's seedlings, and it was held in such high esteem by that celebrated French pomologist that he named it after the youngest of his grand daughters. In the year 1863 it was first offered in France, and in this country it has been on trial several years, but not until recently have its merits been recognised, and its propagation and dissemination seriously undertaken. This shows how much time is required to determine the value and to raise a stock of new fruit. Mr. Leroy was remarkably fortunate in the production of choice pears, but many of his seedlings, like Eugene Appert, Henri Desportes, Madame B. Desportes, Mad. Andre Leroy, and Maurice Desportes, are

such indifferent growers that nurserymen will not attempt to propagate them, and these sorts must therefore remain comparatively unknown, at least until a higher estimate is placed upon quality, and cultivators are willing to pay an extra price for choice kinds that are difficult to raise in the nursery. These varieties will all have to be double worked, which of course adds to the cost of the tree. Petite Marguerite, although a moderate grower, both on pear and quince, is sufficiently vigorous to satisfy nurserymen, and I hope in the near future to see this valuable pear extensively propagated in the nurseries. The list of choice early pears is not so large but a few more good sorts may be added, and I am certain that all lovers of fine fruits will welcome the new comer. There is no doubt that when this pear becomes known, it will be regarded as indispensable.

It is of medium size, just large enough to be acceptable as a desert fruit; skin green, covered with grey and brown dots, and sometimes bronzed on the side exposed to the sun; flesh greenish white, fine, melting, juicy, acidulous, with a pleasant perfume. Ripening, as it does, about ten days before the Bartlett, it possesses a particular value as an early pear. As a fruit of the very first quality, it can be highly recommended to connoisseurs for the table, but it is not large and showy enough for market. Mr. Leroy, in his *Dictionnaire de Pomologie*, describes it as the best pear ripening in August. We believe this statement to be as true in America as it is in France.—W. C. BARRY, in *Country Gentleman*.

BLOOMING WINDOW PLANTS FOR WINTER.

One of the most constant winter bloomers is the Chinese primrose. I have had them in bloom from last October and the end is not yet, for some of the precocious things seem to say: "I will not rest, but keep right along in flower." The ones raised from seed every year are, however, the most floriferous, and for that reason I grow them from seed.

The Bouvardia is another abundant bloomer. It likes abundant heat, and the leaves must be frequently syringed or they will certainly drop off with rust. Heliotropes are good window plants, luxuriating in all the sun they can get, with abundance of water at the roots.

Calla lilies, if potted in September, will commence to bloom about Christmas.

The Browalia makes a very pretty pot plant for fall and winter decoration of the parlor, and by planting a few seeds of it together with mignonette and alyssum, a little nosegay may be gathered late in the fall. For this purpose the seed should be sown at intervals during the summer for succession, and as soon as the plants are large enough, put in small pots and shift to larger ones as the plant grows.

All geraniums are excellent window plants, and some of them are handsome enough in their foliage even if they produce no flowers. The most constant bloomer is Mater Christine, but is a single pink, a color I am not personally fond of. Jean Sisley, a good scarlet with a large white eye, is a great favorite of mine, and Fannie, with her beautifully bronzed

foliage and monstrous truss of salmon colored flowers, is a gem. Geraniums delight in the sunshine, fair dirt and a moderate supply of water. They require to spread themselves to get the best results from them.

Certain varieties of fuchsias are good winter bloomers, and all are excellent window plants. They are voracious feeders, however, and will not thrive upon the same dirt that geraniums will. A liberal quantity of well decayed manure must be given them. They are very fond of copperas, and some people put rusty nails in the earth they are growing in. A correspondent says, having heard of the above, she knew where there was some water standing in an iron kettle which had been in it for months till thoroughly impregnated with the iron. She put a cupful of the liquid to a pail of water and gave her plants a taste of it occasionally. She is so much pleased with the result she advises all her friends to try it.

Now I have said considerable about plants which delight in the sunshine, and of course there will be some wanted for the shady places. I have yet to find a better class for the purpose than the Rex Begonias. In a log basket only fourteen inches long, I have two of them, on which the leaves are sixteen inches long, and they get absolutely no further care than abundance of water at the roots, and constant shade. Some people think it hard to grow these plants, but it is an erroneous idea. They increase and multiply very rapidly once one understands how to grow them; and flowering begonias are capital window plants, constant bloomers, easily grown and just the thing for an amateur.

The winter window garden is also much enlivened and perfumed by the hyacinth, lily of the valley and other plants which grow from bulbs, to be planted in the Fall.—MR. RENNIE.

HYDRANGEA PANINCULATA.

This new hardy flowering shrub is offered to those members of the Association who wish to give it a trial, in the expectation from what is now known of it that it will prove to be a very gratifying addition to the number of those shrubs which are in flower in the latter part of the season. We have comparatively few which bloom after mid-summer, and none which retain their flowers for such a length of time. It is said to be as hardy as a lilac, and is esteemed by cultivators as the finest addition to our list of flowering shrubs that has been made within the past twenty years. The flowers are borne in large clusters or panicles on the ends of the branches. Sometimes these panicles are nearly a foot in length and almost as broad. The flowers are white, and remain for several weeks, often changing in the end of the autumn to a pink color.

It is the custom now-a-days for newspapers and horticultural periodicals to make a present to each subscriber of some strawberry or raspberry plant or some flowering plant in order to increase the circulation of the paper. Now every subscriber to the CANADIAN



HORTICULTURIST may have one of these new Hydrangeas who desires it, and we venture to say that no paper in America is offering to its subscribers a more valuable if as valuable an article as is here offered to our subscribers.

Through the politeness of Mr. Jas. Vick, of Rochester, N.Y.,—so distinguished for his zeal in disseminating a taste for beautiful plants and flowers—we are enabled to give our readers an illustration showing the form and appearance of one of the flower panicles, though much reduced in size. From this one can imagine the appear-

ance of a shrub of three or four years growth, bearing from twenty to thirty of these panicles a foot in length.

Besides this, there is offered to every one who will remit to the Editor ten dollars with the names of ten subscribers, new or old, a copy of the HORTICULTURIST for 1881 free, and the choice of any one of the following articles sent post paid to the person making the remittance, and to each of the subscribers whose names are sent. The following is the list of articles, any one of which that the subscriber may designate will be sent: 1, The Senasqua Grape; 2, two pounds of the Dempsey Potato; 3, Hydrangea Panunculata; 4, a one year old tree of the Wealthy Apple.

THE WEALTHY APPLE.

This variety, so valuable for planting in the coldest parts of the country, originated in Minnesota from some seed of crab apples sent to Peter M. Gideon from Bangor, Maine, about the year 1861. Since that time it has been extensively disseminated, and at the meeting of

the State Horticultural Society of Minnesota, held in January, 1879, the only apples recommended for general cultivation in that State are the Duchess of Oldenburg and the Wealthy.

The fruit is of large size, nearly round; color bright red on a yellow ground; flesh white, sometimes stained with red; tender, juicy and melting; season about with the snow apple; quality very good.

The tree is a free grower and very productive. It has been introduced into northern Iowa, where the climate is very trying to apple trees, and is there pronounced to be a perfect iron-clad. Those members of our Association who live in Muskoka, Manitoba and other places where the thermometer sometimes falls to thirty and forty degrees below zero, will do well to avail themselves of the opportunity now afforded them by the Association of giving this variety a trial.

LEE'S PROLIFIC CURRANT.

Some years ago, when this currant was first brought to the attention of fruit growers, the writer imported some plants from England, since which time he has had it in cultivation; and now after fruiting it for a number of years is able to say that it is a very valuable variety, well worthy of attention from those who are in the habit of using black currants.

Representations have been made with regard to it that have not been borne out in the experience of the writer, especially such as make the bunch as long as that of the Red Dutch, and the berries very much larger than any other sort. In these respects it has not seemed to be in any marked degree in advance of the Black Naples, which has stood for some time at the head of our black currants. But as a cropper it has been the most reliable of any, yielding abundantly in all seasons, and when the plants were cultivated and generously fed, produced very large berries.

To the taste of many, the black currants are not desirable as a dessert fruit, but when cooked they are not only very palatable but a most wholesome article of diet. Made into a jelly or jam they are said to be very useful in cases of hoarseness and sore throat. Certainly it is a very agreeable prescription, and one might well be disposed to imagine a hoarseness, if that were necessary to secure an opportunity to enjoy a taste of black currant jam.

SENASQUA GRAPE.

This variety originated at Croton-point, in the State of New York, and is said to have been a seedling of the Concord fertilized with the Black Prince.

Ordinarily the bunches are of medium size, but with care in cultivation they become large to very large. They are usually quite compact, the berries are of medium size, purplish-black, juicy, sweet, and of very good quality. The vine is vigorous and said to be hardy, but how far northward it will be found to do well has not yet been ascertained. It does not ripen any earlier than the Concord, and will therefore probably be found to be too late to be valuable in those parts of the country where the season is not long enough to ripen the Concord perfectly.

The skin of the berries is as thin as that of the Concord, if not thinner, so that it sometimes cracks, which is against it as a market variety. For home use it will be found to be an excellent fruit, very handsome in appearance and of fine flavor. Some of the samples that have appeared at our exhibitions were certainly magnificent.

A WORD ABOUT NEW FRUITS.

BY A. M. SMITH, ST. CATHARINES.

While I do not advocate multiplying new varieties of fruit unless we make some improvement on those we already have, still it is necessary for some one to propagate and test new varieties in order to make any improvement at all; and while the Fruit Growers' Association and a few private individuals have brought into notice some few valuable new fruits, I think there has not been as much done in this direction as might have been. I know of dozens of new fruits that have been examined and reported upon by committees appointed by the Association, some of which I am satisfied are equal if not superior to many older ones now in cultivation, that are still in the background, and wholly unknown to the public. The most of them are in the hands of amateurs, who have hybridized and propagated them, not so much to make money as from a love of science and a desire to improve

what they have already. Among these fruits are some of the seedling grapes of Wm. H. Mills and Wm. Haskins, Hamilton, the strawberries of Chas. Arnold, Paris, the strawberries and grapes of Chas. Biggar, Drummondville, and the grapes, currants, gooseberries, &c., of P. C. Dempsey, Albury, and Wm. Saunders, London.

Last summer I had the pleasure of visiting the grounds of Mr. Saunders while his currants and gooseberries were ripe, and comparing them with some of the leading popular varieties, and I am sure if they do as well in other places as they do there some of them if they become known will take the place of varieties now in cultivation. He had two varieties of black currants growing by the side of Black Naples and Lee's Prolific, which as I saw them I should prefer to those varieties. One was a larger berry and fully as productive, the other equal in size and productiveness and much sweeter and better flavored. I also saw several seedling gooseberries, crosses between the Houghton and English varieties—some of which have been brought to the notice of the Association before—growing and ripening along side of Houghton's Seedling, Downing and others, which in size and productiveness would excel any of the old varieties, and they were apparently as free from mildew; also a very fine red seedling currant.

Now what I want to suggest, is that some means be devised to test the qualities of these fruits and bring them before the public, particularly those whose originators are too much occupied with other things, or are too modest to push them into notice. Could not the Fruit Growers' Association, now that it has experimental grounds at its command, take hold of these and test their merits, and if worthy to be sent out propagate them and allow the originators a royalty on all that were disseminated? It has been said that any man who makes two blades of grass to grow where but one grew before is a public benefactor, and why should not a man who makes two grapes or strawberries or any other kind of fruit grow where only one did before be considered as such and rewarded accordingly? The Association has in years gone by offered money prizes for new fruits which were equal or superior to standard varieties, but I would suggest that in addition to this an honorary medal or testimonial of some kind should be given by the Association to any one who originates a new fruit of superior quality. I throw out these suggestions, hoping the Association or its Directors will take some action on them at their next meeting.

SEEDLING PEACHES.

The past season has been very prolific in seedling peaches. The preceding winter was mild, hence every peach tree that was large enough to bear fruit was loaded to breaking. Samples of new sorts were received by the Editor from almost every part of the Province, many of which were very fine indeed. Some of those which came from Collingwood were of such fine size, and possessed so many points of excellence, that we are led to speak of these seedlings, for the purpose of calling attention to the importance of raising up a race of more hardy and healthy varieties, which, originating in our climate, shall be better adapted for general cultivation in Ontario than those which are now in cultivation. It has been demonstrated that if you can secure seed from a southern tree growing at its northern limit and succeed in raising plants from this seed, the seedlings thus grown will be more hardy than the parent, and better able to resist the severity of the climate. We trust that our fruit growers upon the shores of Lake Huron and of the Georgian Bay will not lose sight of this fact, but will experiment in this direction, particularly in the raising of seedling peach trees from seed ripened there, for we are confident that in a few years they will be able in this way to secure a race of hardy peach trees that will give them a crop of fruit, if not as regularly as they secure a crop of apples, yet much more regularly than they can ever hope to obtain from trees originated in a more southern climate.

AUTUMN PLANTING OF PERENNIALS.

The old fashioned garden, in which Larkspurs and *Lychnis* bloomed side by side with *Pæonies* and *Prince's feather*, while *Canterbury Bell* and *Columbine* elbowed each other for precedence, and old fashioned, out-of-date *Honesty* hung out its silvery seed pouches; and where sweet scented rosemary and bergamot and southernwood weren't ashamed to flourish rampantly, has given place to the mania for bedding plants and formal arrangements of geraniums and pelargoniums and *coleii*, and to stately *Caladiums* and *Marantas*. But in one of these old gardens in which plants were jumbled together in charming confusion and delightful profusion, every step was a surprise, and a tour of inspection a perfect voyage of discovery, in which were brought to light whole continents of bloom. Here a trailing branch of *Honeysuckle*, dew laden, swept your face; there a wanton sweet brier clutched you with many thorns. Here is a plant whose presence was

unexpected, its growth being concealed by more aspiring neighbors, still it asserts itself, as modest merit does at times, by hanging out a dainty spray of buds and perfected blossoms; there is a regal blossom that two days ago was a tiny, twisted, convoluted bud, that did not act as if it meant to show itself for a fortnight. I have in mind such a garden now, in which York and Lancaster roses stood side by side as the rival factions never did in old England; where Damask roses sent a shower of perfumed petals over a carpet of "Creeping Charlie" and stone crop; where a purple Morning Glory twisted itself round a convenient Hollyhock and dangled its bells from its very top. It was a garden of delight, of unlimited bouquets, of happy luxuriance and never ending variety.

But though not all homes can be beautified with so lovely and luxuriant a garden, there are none which cannot afford a few flowers, and to these the hardy perennials will prove more desirable than an attempt at the bedding out system, in which plants must be judiciously arranged with reference to height and color to be effective. Then, too, bedding plants require an outlay of time, trouble and expense which perennials do not.

There are very few farm houses about which there is not some unsightly view which might be hidden by judicious planting of shrubbery. There are very many ornamental shrubs which may be purchased for the purpose at a nurseryman's if one has means, but our common lilacs and snowballs will answer every purpose. Against these, as a background, may be arranged perennial plants in a manner which will be very effective. Hollyhocks, the double varieties being best, herbaceous Phloxes and the perennial Larkspurs, which often attain a height of four feet, look well against a background of verdure. The old fashioned Tiger Lilies and Crown Imperials also deserve a place. Where more space can be given and some attention paid to their growth, greater things may be attempted.

At this season of the year roots of perennials may be set out with good hope of surviving the winter and making free growth in the spring. One merit, and it is no slight one, of this class of plants consists in the fact that they are always on hand. Once established they go on increasing and growing better every year with no care except to see that weeds do not choke their growth, and to supply them with a little fine manure. Among the most deserving of such flowers we may name, in addition to those already mentioned, Pentstemon, a tall stately plant, whose tubular flowers of scarlet, blue and white grow in panicles; Poppies, whose orange and scarlet blossoms, though not very enduring, are very showy and fine among shrubbery; Pæonies, the deep, blood-red variety being especially beautiful against a green background; Columbines, with horns of honey; the Foxglove, with her purple hood; Sweet William, which is now so much improved that it is hardly the same flower, with its splendid trusses of velvety bloom; Pyrethrums, which are as desirable as fine Asters; Sweet Rocket and wall flowers. Then, too, we have Pinks, both Japan and Chinese, which are perfectly hardy and are never done blooming; Pansies and Daisies; all varieties of hardy Lilies and Roses, which make the garden a bower of beauty in June; the Flowering Almond, "April's gift to April's bees;" indeed, the difficulty is not in the variety, but in making a choice

among so many. Among climbers there is the Woodbine, so universally a favorite, the varieties of Honeysuckle, the Trumpet Vine and Climbing Bittersweet, and the Perennial Pea, the

“wanton witch
In so much haste to wed,
She clasps her rings on every hand.”

In planting out hardy perennials there should be no definite pattern or plan; everything like formality should be avoided. The beds should be thoroughly prepared at the outset that the roots may remain undisturbed as long as possible and still be able to find plenty of food in the soil. Especially avoid crowding, remembering always that the slips of seedlings which look so small and at such a distance from each other will develop into clumps and masses of most decided proportions. Do not set them in an unvarying straight line if they must grow in a narrow border, but break the regularity and monotony as much as possible. Annuals, and bedding and “carpet” plants may be used to fill up vacant spaces with the best possible result. A single verbenas may flourish and extend itself as only verbenas will between two tall plants, a carpet of stonecrop may spread itself somewhere else in the same way, a fringe of blue Lobelia may creep about the roots of another, and the sun loving Portulacca may border the walk. A Scarlet Runner Bean may be allowed to climb the stalk of a Sunflower, thus furnishing a combination quite in accordance with the popular idea of harmony of color, while the Cypress Vine may garland the surrounding shrubs with its fine light green foliage.

Seeds of many varieties of annuals are advantageously planted in the autumn, among which are Candytuft, Petunias, Annual Poppies the Rocket and Larkspurs, Clarkia, Snap Dragon, Sweet Alyssum and others.

To the lovers of flowers these autumn days are grand opportunities for preparing for an abundance of blossoms next spring. Very soon, too, tender plants which are to spend the winter under the snow should be provided with a blanket of fallen leaves, coarse litter or straw, which must be held in place by bits of boards to prevent December's gentle zephyrs from scattering it.—*Michigan Farmer*.

WHITE HOUSE WHITEWASH.

Take half a bushel unslacked lime and slack it with boiling water; cover during process to keep in the steam, Strain the liquid through a fine sieve or strainer. Now add a peck of salt previously dissolved in warm water, three pounds of ground rice boiled to a paste, half pound powdered Spanish whiting, and one pound clear glue soaked well and melted. Add five gallons of hot water to this mixture; stir it well, and then let it stand for a few days covered from dust. The mixture to be put on hot.—ALEX. LINDSAY.

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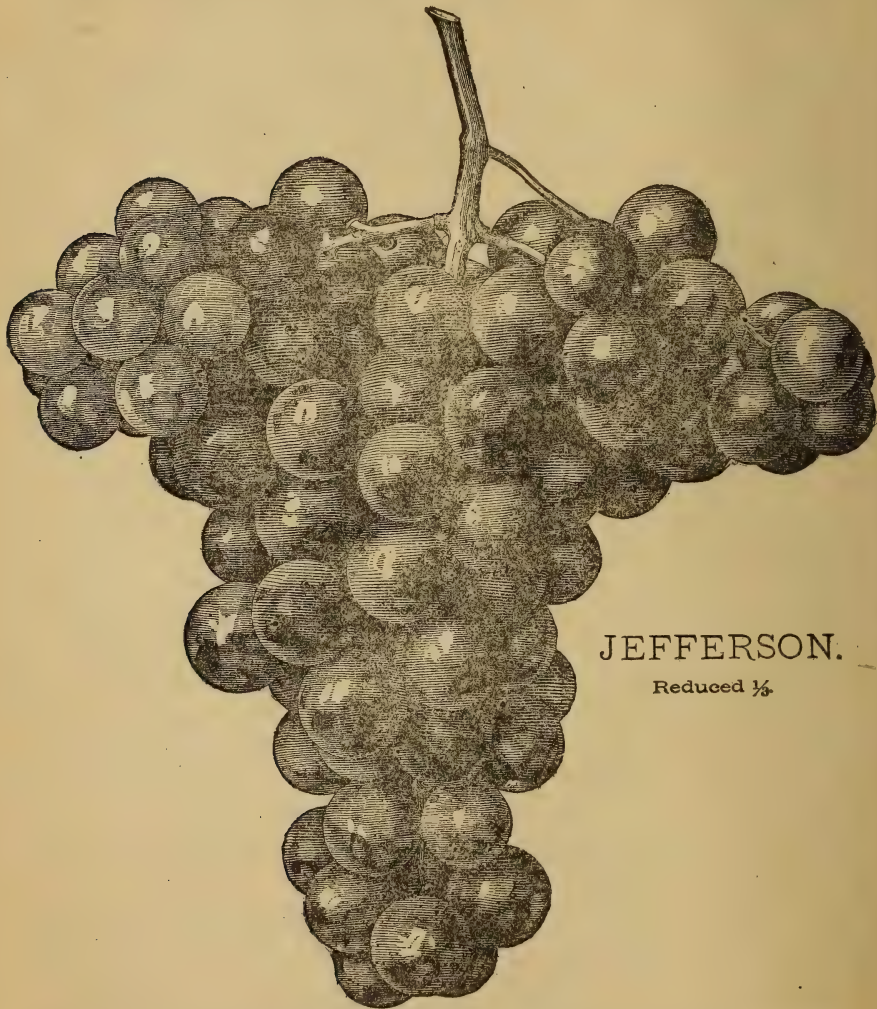
THE JEFFERSON GRAPE.

This is one of the seedling grapes raised by Mr. Ricketts, whose seedlings have become celebrated for their great beauty and excellent flavor. Many of his seedlings have been grown by crossing our native varieties with the European grapes, and while these are in many instances most magnificent in bunch and berry and delicious in quality, there yet remains a doubt whether any of these crosses will prove to be of permanent value in this country, owing to the tendency which exists in all of them to be subject to mildew in a greater or less degree.

But this variety to which we now call the attention of our readers has no intermixture of foreign blood, but is a cross between the Concord and Iona, bearing a strong resemblance in both wood and foliage to the Concord, and seemingly as vigorous and hardy as that variety. The fruit is very like that of the Iona in color and quality, and ripens about with the Concord. We have several times seen this variety on exhibition, and have had opportunities of testing it, and do not hesitate to say that it is to our taste of excellent quality. The Committee appointed to examine the new grapes exhibited at the last meeting of the American Pomological Society, of which Committee our ex-President, Rev. R. Burnet, was a member, reported of the Jefferson Grape, that the berry was "of medium size, deep pink, very vinous; quality BEST."

It is stated of the Jefferson Grape that it has never shown the least sign of rot or mildew, and that it is healthy, hardy and productive, and has stood twelve degrees below zero on the trellis without protection. The fruit is said to keep well, and that the skin is sufficiently tough to enable it to endure transportation without cracking. We notice that Charles Downing, the best American authority in such matters, says of this grape that the bunch is "very large, often double shouldered and very compact; the berries large, roundish oval, light

red, with a thin lilac bloom; flesh meaty or solid, tender, juicy, sweet, slightly vinous, spicy; best for market." Last season the Massachusetts Horticultural Society awarded to this grape a *first class certificate of*



JEFFERSON.

Reduced $\frac{1}{2}$.

merit. The Editor of the *Gardener's Monthly*, Thomas Meehan, says of this grape, that it has all the delicious flavor of the Iona. To those who know the flavor of a well ripened Iona this will be quite sufficient praise.

The writer is unable to speak of the growth and hardiness of the vine, or of the time of ripening of the fruit in our climate, not having any of the vines growing in his trial grounds, but from the testimony now presented believes that it is a variety worthy of attention by all lovers of good grapes who find the Concord to ripen its fruit in their locality. We are indebted to Mr. J. G. Burrow, of Fishkill, N.Y., who has taken in hand to cultivate and disseminate the Jefferson, for the cut, showing the form of bunch and berry, which we are now enabled to present to the readers of the CANADIAN HORTICUTURIST.

A FEW HINTS ON SOME OF THE SUBJECTS FOR DISCUSSION AT THE WINTER MEETING.

BY DANIEL B. HOOVER, ALMIRA, ONT.

Question first.—The Lady Washington apple, or Hoover's Favorite, is not generally known to nurserymen, as far as I can understand. It is a hardy, productive and valuable winter apple; size from medium to large. I have another delightful seedling apple; color, shining red on the sunny side; good flavored and tart; keeps till March. These two varieties were presented to the fruit committee of the Fruit Growers' Association at Hamilton last year. In the last Annual Report, page 57, the latter is spoken of thus: "This red apple is akin to the Fameuse, and of almost equal excellence;" but I would call it better, because it neither spots nor turns brown at the core as the Snow apple very often does, and besides keeps much longer than that variety. The tree is old and very hardy, and should be extensively propagated.

Question second.—The Souvenir du Congres pear is a new variety, having been introduced four years, and proves to be a great bearer of large fruit of fair quality, but is not as sweet as was expected when first introduced. It has not been long enough here to be thoroughly tested.

Question fifth.—Clay soil worked fine on top, or cropped with potatoes, with a good coating of barnyard manure, is a good and profitable way to cultivate an apple orchard. Young trees should have a good wash with lye once a year.

Question ninth.—There are two or three kinds of ferns growing in the woods; one variety can be found on low land, the other two on high, sunny soil, generally among hemlocks. They remain green throughout the year, and make very pretty pot plants for the house in winter.

Question thirteen.—Twenty-five miles north of Toronto the black walnut grows luxuriantly. Farmers should plant them in waste nooks on their farms and in fence corners around the orchards. There is an enormous walnut tree on my neighbor's farm, the trunk being about three feet in diameter, from which I am told he gathered fourteen bushels of nuts one year. I know of only about a dozen walnut trees in the entire Township of Markham, and most of them are very old, supposed to have been planted by the first settlers. I know of but one sweet chestnut tree this side of Toronto; it is abortive but hardy; I intend trying the chestnut myself. The bitter hickory is a native here. I would like to try the Sweet Shellbark Hickory. I planted about a hundred walnuts last autumn, and have about as many more yet to plant. Hazelnuts grow well on high land. Butter-nuts grow here.

If people in general knew what the *Hydrangea* flowering shrub is they would not fail to procure a plant. I have an outdoor *Hydrangea Grandiflora* shrub, which bore five flower bunches this summer about six inches long and four in diameter; they remained about three months in their beauty. I have a pot *Hydrangea*, which is the most beautiful flower I have ever seen. It had six flowers which were the size of a man's fist. The color of the flower varies in color from a fine pink to white and pale green. The flowers remained from last August until a few days ago; I thought best to cut them off and give the plant a rest for a few months. The flower on the outdoor *Hydrangea* came out on the tips of the new wood, about two or three feet high. I cut away all the old wood, leaving only one bud at the bottom for a new sprout to come forth. This is done in the spring of the year.

I would like to know what time and what way is best to prepare nuts for planting? Is it safe to plant them in the fall, or is it best done in the spring?

Will some of our readers who have had experience in the planting of nuts kindly answer Mr. Hoover's questions.—Ed.

NOTES ON SENASQUA AND OTHER GRAPES.

BY ALFRED HOSKINS, TORONTO.

I see by the December number that the Association propose to give the members a choice from four articles, and amongst them is the Senasqua grape vine. I saw the fruit at the Toronto exhibition, and although it was fine to look at, I was under the impression it was too late to cultivate here, and I think it unwise to attempt growing a grape which ripens after the Concord. Mr. Geo. E. Campbell, of Delaware, Ohio, in a report to the Michigan Pomological Society in 1877, used the following language about this vine: "To Mr. Underhill we are indebted for the Croton and Senasqua, which have been for some years before the public. The Senasqua is a large black grape, with fine, compact bunches, and a very high, rich and sprightly flavor when well ripened. It is hardier than the Croton, and with much better foliage. With me certainly as early as the Catawba, and I should expect this grape to succeed fully as well as the Catawba in vineyard culture, and to be valuable both as a fine table grape and for wine. It ripens a little later than Concord." In the vicinity of Toronto and east it would be useless to attempt to grow the Catawba.

In Bush and Son & Meisener's illustrated catalogue this language is used: "A hybrid raised by Stephen Underhill from Concord and Black Prince. The vine is vigorous and productive in rich soil, and moderately hardy. The originator does not recommend it as a profitable grape for market purposes, as it is rather late in ripening, (a few days after Concord), but only as a fine and amateur fruit." The fruit is also said to crack.

In the December number I also see that a correspondent writes of the Janesville. I have never seen the fruit, but I think it unwise to advocate the propagation of a vine which produces but poor fruit, and whose only excellence is its earliness. Mr. Campbell in the same report speaks of this vine also. He says, "the Janesville is another early black grape, having the merit of being both very early and very hardy; generally healthy and productive. It is only of medium size, and not better than Hartford in quality. It is however earlier, and does not fall easily from the bunch. For northern locations it would have value as a very early ripening hardy grape, notwithstanding its inferior quality."

T. S. Hubbard thus describes it: "An early hardy grape. In quality, habits and appearance about half between Clinton and Hartford."

What we want is a grape which will ripen from the middle to the end of September, of good quality, at least as good as the Delaware. The aim should be to obtain a good early wine and table grape, and I believe we shall yet become possessed of them.

During the past year I had fruit from the Wilder, Lindley, Agawam, Elvira, Brighton, Burnet, Champion, Telegraph and Delaware. The Champion is mere trash and not worthy of room. Its only merit is its earliness. I found the Telegraph not much better. The centre was very hard, and it was difficult to separate the flesh from the seed. The berries of the Elvira were so close that they cracked and quickly spoiled, and the flavor was not very good. It is a fine vine to cover sheds, &c., as it is very vigorous and the leaves large and healthy. I am not able to give a very favorable report of the Burnet. It mildewed with me, and the leaves have a habit of scalding. The fruit was irregular and rather late in ripening, some of them not ripening at all. Those that did ripen were very fine and delicious, and I am sorry to report so unfavorably of such a promising grape. The Brighton ripened before the Burnet, and is a very fine and showy grape, and I think should be extensively grown. It should be picked as soon as ripe, for I found some which I had allowed to hang to lose their flavor. The Rogers' Hybrids mildewed a little but not much, and all ripened. My soil is light and sandy, facing the south and west.

I wonder the Association have not endeavored to obtain and disseminate Mr. Read's (of Port Dalhousie) white grape. It is early and apparently hardy, and the only fault is that the bunch is small, but it far exceeds many of the favorite grapes now in cultivation. Mr. Read has also, I understand, a very fine seedling gooseberry, which it would be wise for the Association to endeavor to obtain and disseminate.

The raspberry sent last year by the Association has succeeded well with me. It made four strong canes about five feet in length, and I believe will fruit next year. I have several of the new grapes in cultivation, and hope at some future time to be able to give you a report of them.

THE PANSY.

BY MRS. JAS. DAVIDSON, in *Iowa State Horticultural Society's Report*.

The pansy (*Viola tricolor*) was imported from Europe, and originally called heartsease. The French called it pensee, from which comes the name pansy. It seems to be a law in this busy world that nothing desirable is attained without labor. This is especially true of pansy culture; it is equally true that they amply repay our care and attention.

They will grow and bloom when indifferently cared for; but if *fine, large flowers* are desired, certain conditions must be complied with. Several years experience, as an amateur, have taught me, that the plant requires a certain location, treatment and soil to bring it to perfection.

Good plants can be procured from the florist, or grown from seeds. My own method has been, to sow seeds, about the first of April, in a shallow box of fine, mellow soil; sprinkle a little soil on the seeds, barely covering them. Place upon the top a couple of thicknesses of newspaper, the exact size of the box; keep the paper wet till the seeds sprout, then uncover and gradually give sun and air.

It is necessary to have strong, vigorous plants, and much care must be exercised at this period to keep the young plants strong and healthy. Sun and air must be freely given. If kept too damp and warm, they will grow slender and sickly.

As soon as danger from frost is over, remove to the open ground; water freely, and blossoms will soon follow, which will grow larger as the weather grows cooler. Seeds sown in the open ground in June will bloom late in the fall.

In the location and preparation of the soil lies the secret of success in pansy culture.

First, the location should be on the north side of the house; allow no shrub, tree, or other obstacle, to obstruct the sun's rays; the object being to get the full benefit of the morning sun, and at the same time be protected from its mid-day heat.

Secondly, the soil. Mark out the required dimensions of the pansy bed; dig down eighteen inches; remove the dirt and replace it with leaf-mould, sand, and well rotted manure. If leaf-mould is unattainable, get as light and porous a soil as possible; the earth immediately under a turf that has been undisturbed for years, is excellent.

The pansy likes plenty of water, but it must not be allowed to stand on the bed. If the soil is light and porous, as it should be, there will be little danger. Liquid manure should be used once a week. The soil can hardly be too rich for pansies.

If flowers are the chief object, do not let the seeds ripen. If, however, you desire to save seeds, select a few plants for that purpose, and keep the pods picked off from the others, the same plants not producing as large flowers, if permitted to ripen seed. After blossoming freely, pinch back, and more buds will soon follow.

The pansy endures over winter, if properly protected. This is done by throwing coarse litter and straw over the plants; care should be taken not to smother the plants, while covering sufficiently to protect them. In the spring, uncover them, and your plants will be green and bright, ready to respond to your care and attention.

They will blossom early, and have a profusion of flowers. New ones should be started by again planting seeds in April. Plants are not satisfactory after the second season; young plants producing the largest and finest flowers.

There is no recreation more invigorating and interesting than flower culture. Three promoters of health: exercise, pure air, and pleasant emotions, are most happily blended. And among the many beautiful flowers that should be cultivated, few will give more pleasure than the lovely, saucy, charming pansy.

NEW RASPBERRIES.

The Chairman of the Committee on new fruits, appointed by the Michigan State Horticultural Society, reports:—

“The Cuthbert Raspberry has for some months past attracted much attention as the coming market red raspberry. Experience with it in our State cannot, of course, have yet been very extensive, but so far it would seem to be favorable. J. D. Baldwin, of Ann Arbor, has doubtless been as thoroughly acquainted with it as any other person, and so far as we have understood, his impressions respecting its desirability are favorable. It seems to quite hardy, of fine size, firm texture and rich color. Queen of the market is considered as identical with it.

MONTCLAIR

is a recent seedling of Mr. E. Williams, of Montclair, New Jersey. We think it is not yet in the market, but plants sent us for trial have now fruited two seasons, and prove to be of fine size, great firmness of texture and excellent quality—qualities essential to a good market berry. It proves abundantly hardy at the lake shore. It purports to be a seedling of the Philadelphia, and, like its supposed parent, produces suckers but sparingly.

GREGG

was heralded with so great a flourish of trumpets that there seemed occasion to fear that it might fail to realize all that we might be led to expect of it. It seems now clear, however, that it is really a step in advance of the old and popular Mammoth Cluster, at least so far as size is concerned, while it is at least its equal in quality and productiveness. It seems pretty sure to become, among black caps, the leading market variety, although we already hear of varieties with the ability to outdo and supersede it.

THE DEMPSEY POTATO.

This new variety was raised by the President of the Fruit Growers' Association of Ontario, P. C. Dempsey, Esq., and through his kindness it is offered to all the subscribers to the HORTICULTURIST who prefer to give it a trial instead of the grape vine, flowering shrub or apple tree. In giving the history of this potato Mr. Dempsey says:—

“About the year 1861 I planted a hill of the Early Rose potato in a patch of Early Goodrich, carefully removing the stamens from all the flowers of the former, and depended upon natural causes to fertilize them. No other variety being near them, there must be a cross or no seed balls would have been produced. The Early Rose is not apt to produce seeds on account of its ripening before the seeds mature. In order to overcome this difficulty I employed water and stimulated it occasionally until the seeds had matured. The seeds were planted the following spring, and each plant grown for a time in a thumb pot, then transferred to the open ground, giving each plant about two by three feet, they were carefully cultivated. The result was that many of the tubers attained full size the first year. I had about two hundred varieties giving more or less promise of excellence. Many of the varieties had very tender foliage, were liable to sun-scald and lose their foliage before the tubers had matured. I commenced rejecting any that did not come up as I thought to the then standard, which included hardness of plant, full medium sized tubers, and to contain very few if any small ones, to cook dry and mealy, not gummy, and to be good in flavor.

“In 1872 I had thinned them down to about one hundred varieties, which I showed that fall in Hamilton. I was nearly two days contending for space to exhibit them, and received very little encouragement for the enterprise. I have continued to reject, until I have but the one variety left.

“The Dempsey is a good strong grower, and seems to do well on every soil, but does best on heavy soils. It is a good cropper, not being excelled by any table variety with me in that respect. The tops stand up well, rendering cultivation easy. It does not readily yield to drouth; maintains its foliage green usually until frost, and usually continues to grow until then. If planted early it does very well as an early potato, but is not the earliest variety.”

The writer has had an opportunity of testing this potato both boiled and baked, and has found it to be of excellent quality, mealy and dry. In form it is oblong, usually tapering towards the seed end. The color is a purplish red, sometimes staining the flesh when cooked, and the skin is often quite covered with russet.

AUTUMN BERRIES.

We take great pleasure in calling the attention of the readers of the CANADIAN HORTICUTURIST to the colored plate which adorns this number of our monthly. It is a beautiful representation of some of the autumn berries which are to be found on several of our native or cultivated shrubs, and we trust that it will serve to awaken the attention of those who are planting ornamental shrubs about their dwellings, to the beauty of some of these when laden with their variously colored fruits. We plant so as to have as far as possible a succession of flowers, and prize as especially valuable any which flower late, so as to extend our season of bloom as far into the autumn as we can. But there comes a time in our Canadian climate when the flowers cease and the leaves fall, and the snow covers the ground with its mantle of white. What can we do to give beauty to our lawns, and relieve the dull monotony of leafless twigs in the chilly autumn days, and when the wintry winds are driving the snow before them in circling eddys?

Dame nature, ever bounteous and mindful of that which shall give beauty and variety to her works, has given into our hand many a tree and shrub that we can plant, if we would only use a little forethought, so that our lawns shall be by no means devoid of beauty, nay, rather shall possess a charm in these bleak days when the flowers of summer are gone, that can only be brought out in its fulness at such a season.

In the leafy month of June we pass by the evergreens without thought perhaps, but when the boughs are bare with what pleasure does the eye rest upon the evergreen trees, noticing variety of shape and foliage, now admiring the sturdy form and sombre hue of the Austrian pine, or the towering spire of the Norway spruce, or the graceful outlines of our Canadian hemlock. It is then that we fully appreciate the value of the evergreen trees, as they stand out in the fulness of their beauty in the winter landscape. So, too, we now notice the beautiful effect of those trees having colored bark, and pause to admire the group of white bark birches intermingled with the golden bark willow, the red bark dogwood and the striped bark maple.

But it is to the effect which may be produced by planting those trees and shrubs which in autumn and through a large part of the winter are ornamented with beautifully colored berries, that we wish

particularly to call attention. In our plate, for which we are indebted to the politeness of Mr. Jas. Vick, the enterprising publisher of *Vick's Monthly*, will be found excellent representations of several berry-bearing shrubs which can be planted in our climate, by means of which a very pleasing appearance can be given to our grounds during the autumn and winter months. The berries at figure 6 represent those of the *Euonymus* or Spindle tree. There are several varieties of Spindle trees, the particular one at number six in our plate is the European, having orange-scarlet berries, which appear as the capsules burst, and when the shrub is covered with these it is a very beautiful and showy object. It is a native of Europe, and is found abundantly in Great Britain. When growing wild in hedge-rows and thickets it does not attain to any great size, but when planted singly in a favorable spot it will grow to the height of twenty or thirty feet. The most handsome species is found in the south of Europe, and is known as *Euonymus latifolius*, or broad-leaved *Euonymus*. It has broad, shining leaves, and large red pendulous fruits with orange-colored seeds, which are suspended in the air when the capsules open, thus giving to the tree a very attractive appearance. Whether it will endure our climate is very doubtful; we are not aware that the experiment has ever been tried. We have a native variety which is very pretty, and of course perfectly hardy. It prefers moist soils, and is found from Canada to Florida; it is known as the American *Euonymus*. The capsules are of a deep crimson; the seeds are white, and nearly covered with a scarlet integument. They are very showy when laden with their fruits, and are often called the Burning Bush on account of their ruddy appearance.

At the top of our plate, and designated by the figure 2, is the Whorled Winterberry, (*Prinos verticillatus*), or, as it is called in some places, the Black Alder. The flowers of this species are white, and the berries of a bright crimson red. It is found growing from Canada to Virginia, in damp sandy soils or on the borders of swamps. There is another variety, the *Prinos glaber*, which has black fruit, and hence is called Ink-berry. These berries remain all winter.

At the right hand corner, and designated by the figure 4, are the scarlet berries of the Berberry, which also continue to hang all winter. This shrub is too well known to need any particular description. The variety here represented is the European Berberry, (*B. vulgaris*); which

fruits more profusely than our native, *B. Canadensis*. The writer was struck with the beauty of one of these shrubs laden with scarlet berries shining through their partial covering of newly fallen snow, when passing a neighbor's grounds this morning.

The cluster of small white berries to the left of the Berberries is the fruit of a native Dogwood or Wild Cornel Tree, *Cornus Stolonifera*. The bark of this species is red, like that of *C. Sangunea*, and contrasts beautifully with surrounding objects, particularly towards the end of winter, when the bark seems to assume a brighter hue.

At the bottom of the plate, figure 5, is seen the fruit of one of our Thorns, the *Crataegus lucida odorata*, whose leaves are bright and shining, hence the specific name *lucida*, and whose flowers are fragrant, hence the further specific name of *odorata*. The fruit is a deep dark red, shaded with black.

The berries designated by the figure 7, on the left hand side of the plate, are those of the American Holly, (*Ilex opaca*). This species has not been found in Canada to the writer's knowledge, nor indeed north of the State of New Jersey. It abounds on the eastern shore of Maryland, and near Richmond in Virginia. It bears a striking resemblance to the European Holly in its shining evergreen leaves and numerous red berries.

The large white berries just above the centre are those of the Snowberry, (*Symphoricarpos racemosus*). This is a very hardy native shrub, found in Ontario and on the north-west coast at Nootka Sound. Its large white berries form a very pleasing contrast when interspersed with the red fruits of the Berberry and Scarlet Winter-berry.

The two remaining fruits are those of climbing shrubs. Those at figure 1 are the berries of the Staff Tree or Climbing Bitter-sweet, (*Celastrus scandens*). This is a native twining shrub, found growing in many parts of Ontario. When the orange-colored capsules open at the approach of winter, the scarlet seeds are disclosed, giving to the plant a very attractive appearance. The berries continue to hang for a long time after the leaves are fallen.

The dark purplish berries at figure 3 are those of the Virginia Creeper, often known by the name of American Ivy, (*Ampelopsis quinquefolia*). The leaves of this climber change in autumn to crimson and scarlet and purplish red, and for a short time it is gay indeed with its gorgeous crimson leaves and purple berries on scarlet fruit-stalks.

MORE ABOUT THE JANESVILLE GRAPE.

COMMUNICATED.

I see that your attention has been called to the Janesville Grape by Mr. Farncombe, and that you wish to hear the experience of others. I agree with your Newcastle correspondent in many points, but if he cannot ripen them before September he had better leave for some more favorable clime. I had them ripe here (Brampton) this season 20th August, which is no uncommon thing. I don't consider them superior or even equal in quality to the Concord; about equal to the Beaconsfield or Champion. But then it is the earliest grape I am acquainted with, (the Burnet has not fruited with me yet,) and is perfectly hardy; it is said to stand forty degrees of cold without injury. I think it is the most profitable grape we have, considering its hardiness, early maturity, and it being a free grower and good bearer. It comes on before the market is glutted, and consequently brings a good price—much better than finer varieties ripening later in the season.

CHICKENS AS FERTILIZERS.

In the last agricultural report for this State, says the *New England Farmer*, we have the testimony of Mr. Kinney, of Worcester, that from seventy-five hens he made in one year \$250 worth of American guano. His main object in keeping hens was for the purpose of dressing his land. Formerly he bought many cords of manure to dress two acres of land. He now cultivates eleven acres without buying a cent's worth of manure. He keeps his hens confined the year round; he is very careful to give them clean, wholesome food, and to keep their house clean and sweet. The floor is covered with three or four inches of gravel, and the droppings carefully and frequently removed, and kept dry. At the end of the year he had one hundred and fifty bushels of droppings, making about one ton in weight, which he pulverized and mixed with three and one-half tons of poor loam and a little plaster of Paris. He then had four and one-half tons of guano, which he testifies is better than any imported article he has tried. He sows it on the ground, uses it in a solid or liquid form; in the hill, and everywhere it is a success. The experience of Mr. Kinney is certainly worthy of thought. If the excrements of birds on the coast of Africa and South America are of sufficient value to import to this country, we cannot see why we may not use with profit the droppings of fowls raised in our own land.

Hens properly fed and cared for will return one hundred per cent. profit above their cost of keeping in eggs alone, and when we add their meat producing power, and lastly their fertilizing capacity, who will say that they are not profitable to keep?—*Florida Dispatch*.

RESULTS OF EXPERIMENTS.

BY A. MILNE, LANGFORD.

I received two trees of the Ontario Apple last spring in good order, which I planted directly on their arrival, and they took kindly to the soil and treatment, and are now looking healthy and thrifty. The Saunders Raspberry was likewise received in good order, and promises prosperity in its new location. The Arnold Hybrid I turned over the fence as being an incumbrance to the ground. The Salem Grape gave about a peck of grapes last year, and the past season set abundance of fruit, which dropped off as the season advanced until there was none left to ripen; still I shall give it another chance, and if it fails the coming season it will be cast out. The Flemish Beauty pear has never fruited yet, although I have two fine trees grafted from it, one of which gave me a bushel and a half fine pears—luscious fruit. I had almost forgotten to say that the Burnet Grape has not yet fruited with me, but is in a healthy condition, and promises to fruit next year.

INQUIRIES ABOUT WINE MAKING, — GOOSEBERRIES, &c.

BY JOHN KNOWLSON, LINDSAY.

If any of the members of the Association have knowledge or experience in wine making from the Brant Grape, I should be glad to hear the result through the medium of your valuable periodical, and I should also feel obliged for information from any of the readers of your journal who may have experimented in making wine from the mixed juices of different varieties of grapes, and if so the varieties so mixed that have proved satisfactory. And, Mr. Secretary, I would beg to suggest that a subject of this nature might be included amongst others for discussion at some of the society's meetings, if not considered out of place for horticulturists to examine questions relating to the manufacture of wine.

I planted in the spring of 1879 about an acre of grape vines with sixty varieties, intending to plant more when these have been fairly tested. I hope to be enabled to report on at least half the number of these varieties next autumn.

Nearly all the trees that I have got through the first three or four years distribution of the Association failed—apples, pears, grape vines,

plums, &c. My Glass' Seedling Plum is still progressing, but very slowly, and I have one branch of the MacLaughlin living, which bore this year for the first time, and from which I gathered forty-four very fine specimens, and from which I shall be able to get a few good scions for grafting next spring. Gooseberries, viz, Houghton's, Smith's, and Downing's Seedlings, have succeeded admirably with me, but I found the last named most profitable. The raspberry which I got from the Association last spring made a growth of about fifteen inches. I may add that I have been very successful in growing the Lima Bean, which I prize for its nutritious qualities as well as for its agreeable flavor.

THE LADY GRAPE.

This white grape does not seem to ripen at Whitby. Mr. J. K. Gordon of that place, writing to the *Fruit Recorder*, says:—

“It is white, of poor quality, without a redeeming feature. It is late in ripening, later than Concord or Delaware, in fact my Isabella ripened this year as soon as it. So sour and acid that the children won't eat it; and such a wretchedly poor grower as to be quite unworthy of cultivation. I have grown it now for the last four summers, on as fine, rich clay loam as is to be found in Ontario, and though to all appearance in the best of health, and having borne about six or eight bunches last year, and this year, the vine is not over three feet high, and I see no prospect of growing any larger, while the Brighton, the Champion and Worden, which I got from you at the same time, are growing alongside very luxuriantly, and have given me very great satisfaction. I will give this worthless Lady another year of grace, and unless it does better with me than heretofore I shall root it up, and fill the place with a better variety. Friends who have received the Lady have had similar experience of it,

NEW VARIETIES OF POTATOES.

We notice in an American exchange that an advertiser offers for sale no less than five hundred new varieties of potatoes, being the collection which won the grand prize medal and diploma at the Centennial Exhibition, held at Philadelphia, each of which, he claims, has its own peculiar merits. He offers sample tubers of the five hundred varieties, correctly named and labeled, for one hundred dollars. He also offers packages of fertilized potato seed, all ready for the experimenter to plant. Apparently he is determined that we shall have as great a variety in the “Murphy” line as in the apple or anything else.—E. J. LEAVENWORTH.

SOME OF OUR AMERICAN EVERGREENS.

Robert Douglas, of Wakegan, Illinois, has raised more and a greater variety of Evergreens than any other man in America, hence his opinion of the merits of a variety, from his long experience in growing these trees, is entitled to great weight. He says:—

“We find that our red and white pines compare very favorable with the Scotch and Austrain pines of Europe. Our white spruce is as beautiful and hardy as the Norway spruce, but we need all these kinds for variety. Our balsam fir will not compare favorably with the European silver fir, or the silver firs of the Pacific slope, but we have the *Abies sub-alpina* of Wyoming, and its variety *Falax*, and the concolor of Colorado, the former of the habit of *Abies Sibirica*, and the latter of the habit of the California silver firs. We have the *Abies Douglasii*, of Colorado, more hardy, and even more beautiful than our hemlock. Among spruces we have the Colorado *Menzies*, and *Engelmanni*, and all these with the exception of concolor which have been tested thoroughly in the northwest, will compare in beauty with any of the foreign kinds, and in hardiness with any of our native kinds,

YELLOW TRANSPARENT APPLE.

This variety was imported from St. Petersburg, 1870, by the Department of Agriculture. It has been fruited at a number of points east and west, and we have every reason to believe it will prove a valuable acquisition as a very early variety, of good quality, for either eating or cooking. Doctor Hoskins, of Newport, Vermont, makes the following report:

It is an extremely early bearer, giving fruit the third year from grafting on a seedling root, and is now bearing its third crop, consisting of over one bushel. The tree notwithstanding its productiveness, is a free grower, being now some eight feet high. It is also an erect grower, and bears its fruit on short spurs close to the main branches, so that it can carry a heavy crop when the tree is small without breaking down. Though so full of fruit that there seem to be more apples than leaves, yet the branches are not bent down at all.

In size the Yellow Transparent is full medium, round ovate in form, straw yellow in color, with an extremely melting, juicy flesh of delicate sub-acid, but not very high flavor. It is fair, uniform in size and its chief merit, in our eyes, aside from its perfect hardiness and early and abundant bearing, is that it is the earliest dessert apple we know. It begins to come into eating by the first of August, and the bulk of the crop is just now (August 10) ripening up. It will not keep long, soon becoming mealy and cracking open at full maturity. But for a home apple, or to sell direct to consumers in a near market, it cannot be surpassed; and its waxen beauty and fairness, together with its acceptable flavor, will make it a favorite wherever grown. It is about two weeks earlier than Tetofsky, and if it had been introduced first we doubt if the latter would ever have been heard of.

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[No. 3.

OUR WINTER MEETING.

The winter meeting of the Fruit Growers' Association was held in the City Hall, Hamilton, commencing on Tuesday, January 19th, 1881, at ten o'clock a.m.

President Dempsey occupied the chair, and after the reading of the minutes by the Secretary, called for reports from the various committees.

P. E. Bucke, chairman of committee, submitted the following

REPORT ON FENCES:

Your committee on fences having examined into the subject, have the honor to report:—

1st.—That the existing laws regarding fences are unjust to land owner and occupier, because if he has no need for a fence around his farm, society should not compel him to build one.

2nd.—That if a farmer chooses to soil his cattle he should not be required to expend on fences a tax estimated at two dollars per acre per annum to keep his neighbors' or highway cattle out of his property.

3rd.—That no law should compel a land occupier to make a road or division fence to protect himself from the public at large; that the public are just as much interested in the welfare of the state as are the individuals of the public. These last, therefore, should be protected by a public law compelling individuals to inclose their stock.

4th.—That although the public have a right to travel on the roads they have no right to use said roads for a cattle run or pasture ground.

5th.—That every farmer or property owner, either by paying taxes for road construction or repairs, or by the performance of statute labor, has a certain vested right in the roads surrounding his lands, and in

newly settled townships, or townships being less than half cleared, a majority of owners should say whether the public roads may be used for any other purpose than the legitimate travel or driving of stock when required along them.

6th.—That during winter these roads are fenced in such a way that they harbor snow drifts, thus blocking to a considerable extent the travel along them.

7th.—That the maintenance of fences is an excessive burden on the farmer, now that timber is becoming scarce and dear, and it behooves the Legislature to make such provision by law as will assist in doing away with such an oppressive expense.

8th.—That in the early settlement of this country, when cultivated lands were scarce and there were no pasture lands for cattle, it was in the interest of individuals to fence in their crops and allow the cattle to run at large. Now the case is different. The principal part of the country is cultivated, and the pasture and waste places are in the minority; these, therefore, may be fenced, and not the larger tracts of farm lands.

9th.—That the owners of stock are the individuals who reap the benefits of such, and that, therefore, non-stockowners should not be put to the expense of fences in order that stockowners may make a profit out of their cattle.

10th.—Therefore your committee, taking into consideration the above facts, respectfully suggest that in counties where a majority of the acreage of the soil is arable land, all cattle, horses, pigs, sheep and geese be prevented by legislative enactment from running at large. That owners of all kinds of stock should be compelled to keep them inclosed, or pay all damages that may accrue from their depredations. That it may be the duty of any one finding cattle straying along the roads, streets, or any unfenced lot, not accompanied by a suitable attendant, to drive the same to pound. That for every head of cattle so impounded, the individual who owns such stock shall pay to the pound-keeper over and above all other fees or charges, the sum of 50c. per head to be paid to the individual who puts them in pound. That all damages to trees—whether set on the land of the owner or along the roadside fronting his land—done by animals, be assessed at the full value, having in consideration the age of the said trees and the number of years planted; that such damage be paid by owner of said

stock to the owners of said trees. That suitable attendants be employed when cattle are being driven to market, or from one part of the county to the other, so as to keep them from straying off the road. That any one turning off the road into a neighboring field, either on foot, in a vehicle or on horseback, shall be liable to be apprehended as a common trespasser, and as such be amenable to the law in such cases made and provided.

P. E. BUCKE, Chairman.

THOS. BEALL.

Mr. Beadle said he thought the report was correct, but thought that it was deficient in that it failed to give any argument or statistics to back up the statements made. He would like to see some estimates put in the report, so that when it went out to the public the farmers would see the reasons why these things are so. He would like to have the report referred back to the committee, so that some figures demonstrating the facts stated—which he did not deny—could be incorporated therein. The farms were too much occupied by cross fences, and he did not believe the farmers knew what a large tax they were paying for first cost and maintenance of fence, to say nothing of land taken up. In some counties of New York State the people have taken away nearly all the fences, and the roads are lined with shade trees, and the whole country has the appearance of a garden, and it would be a good thing if such a system could be introduced here.

Mr. Beadle then moved, seconded by A. M. Smith, St. Catharines, that the committee be requested to supplement their valuable report with some arguments and facts going to show why they have come to these conclusions.

NEW VARIETIES OF APPLES.

Mr. Beall, of Lindsay, read a valuable paper entitled "By what standard shall we test new varieties?" which was received with thanks, and ordered to be printed in the Annual Report.

The meeting proceeded to the discussion of the following question:

1.—What new or little known varieties of apples have been introduced, and which of them promise to be of value?

Mr. Beadle said Grimes' Golden Pippin; a new variety, the introduction of which had been helped by this society, was successfully grown in Lindsay, and thought in size and flavor it was superior to the Newtown Pippin for the English market.

Mr. Bucke said he had got Grimes' Golden Pippin from the Association some years since, and it had grown well but had never borne a crop. A graft, however, had borne well.

Mr. Beadle remarked that Mr. Cochrane, of Liverpool, England, had sent him a communication stating that English buyers preferred a small, showy apple to larger fruit.

Mr. Holton referred to the Haas apple, one of high color, handsome, and a hardy grower; more especially fitted for growth in the north.

Mr. Beadle thought the Haas was a rich, good apple; as raised on a clayey loam they were rich flavored and fairly juicy, and would keep well.

Mr. Arnold, of Paris, said that among the new and promising varieties of apples he would place Cox's Orange Pippin first; tree hardy, moderate grower, good bearer, and finest flavored of all desert apples. Second, the Swazie Pomme Grise, tree hardy, fruit good size, crisp, excellent flavor; almost equal to Cox's Pippin. Third, Arnold's Beauty, a first-class grower, superior in appearance to the before mentioned, and a constant heavy bearer. Fourth, the Ontario, a superior apple for general cultivation, large in size, a favorite in the kitchen and orchard, and an annual bearer. The following varieties are superior to the Baldwin, though not equal to the above: Grimes' Golden, Dora, Benoni, Ella, Pomme Royal, Moyle, and Centennial Russet.

Mr. Bucke said the Cox's Orange Pippin was the most liked in England.

The President said it was the best apple he ever tasted.

Mr. Morris, of Fonthill, said, for Canada the Wealthy apple was entitled to the first rank among the new varieties. Another good apple for all sections was the Wallbridge, a fine large red early winter apple. Another good apple was the Stump, similar to and better than the Sherwood's Favorite. He could indorse what had been said about the Haas and other apples.

A. M. Smith said a good variety was the Mann apple, which was a good keeper and bearer, and was well adapted to sections where the Baldwin could not be grown.

Mr. Woodward, of Lockport, New York, spoke strongly in favor of the Mann apple, which was grown extensively in New York State. It was a profitable apple to raise in this section.

Mr. Beadle said there was no beauty in the apple, and it was neither a tart or sweet fruit, but it was a good keeper.

Mr. Woodward replied that he found it tart, and a good cooking apple. It was valuable as a late keeper.

Mr. Holton, of Hamilton, mentioned the Perry Russet, a western fruit, which was a spicy, nice flavored apple, and about the same size as a Greening, although he had found it a shy bearer.

The President said that in 1872 he had procured Russian, German, French and English Apples, and found none to equal a Russian fruit called the Grand Sultan, which matures with our Early Harvest, and produces two bushels to one of that variety. It is as good as the Astrachan, conic in form, medium size; whitish yellow splashed with red, making it very pretty, looking like wax. It produces an over-crop every year. Grand Duke Constantine is a very pretty fruit, but very difficult to grow here. The English apple Cellini is pretty, conic in form; an October fruit; one of the best of kitchen apples, and very prolific. Cox's Orange Pippin was with him an alternate and very even bearer. A good variety was the English Pippin, which it was said would keep two years.

Mr. Morris, Fonthill, said the American Pippin, or two year apple, was an apple which had first been grown in his section. It was a good bearer, brought a high price in the market, and was a good shipper.

NEW VARIETIES OF PEARS.

What new or little known varieties of pears have been introduced, and do any give promise of being valuable in our Province?

Mr. Arnold, of Paris, said that in his opinion the Goodale was one of the best, being very hardy, producing an excellent crop, besides being a better fruit than the Bartlett. The next variety was the Negley, a beautiful pear, and in his opinion the best grown. It was new, and little known; had not been shown in Canada over two years.

A. M. Smith, St. Catharines, had grown and fruited the Goodale this year and it was an excellent variety.

Mr. Biggar had been greatly disappointed in the size of the Brockworth Park variety, though it was very sweet, juicy and nice.

Mr. Bucke, of Ottawa, said that he believed it to be a good pear, but his tree had never borne, and owing to the severity of the climate at Ottawa he thought never would.

Mr. Morris, Fonthill, particularly recommended the President Drouard on account of its freedom from blight. It was less subject to this than any other variety he had grown.

Mr. Beall had tried several new varieties, but all had failed except the Flemish Beauty, which had proved successful.

Mr. Gilchrist did not know much about new varieties. He had grown twenty-two different kinds of the old sort. He gave the preference to the Flemish Beauty, as it was free from blight.

The President had attempted to fruit more than he had ever succeeded in doing. He had imported two hundred different sorts, but had only met with success with about ten of the French varieties. Some Belgian pears were very good, more especially the General Todleben. It was a fine fruit with an enormous stem, with a suture like stone fruit, and was as highly flavored as the Josephine de Malines. He could hardly recommend any of the new varieties. For marketing purposes he placed Clapp's Favorite, Josephine de Malines and the Bartlett at the head of the list.

The Secretary had fruited the Brockworth pear, but thought it was only an old variety with a new name. The Souvenir du Congress was a large, handsome pear, not unlike the Bartlett in appearance, ripening about the same time. He did not think much of its quality; it was not as good as the Bartlett. The Goodale, though an old variety in the States, was not much known in Canada. It was a juicy, sprightly fruit, ripening in October, not particularly attractive in appearance, but of excellent flavor. The Josephine de Malines was a good winter pear, but he considered most winter pears as little better than turnips. The Josephine de Malines, however, could not be classed among these.

The President hoped that the remarks made would not discourage anyone from attempting the growing of winter fruit. He knew it could be done, and he wished to see it tried. He stated that the lowest figure he had been offered for the Josephine was \$6 per bushel, and he could grow them as easily as any other variety.

PACKING FRUIT.

3—The best methods of putting up the different fruits for market.

Mr. A. M. Smith read the following paper on this subject:

One would be inclined to think that the Association had already discussed this subject till it was exhausted when we remember the

number of times it has been before us. But should we visit most any of our markets in fruit time and see the way fruits are brought in; strawberries and other small fruits, for instance, in pails and pans (ready for jam, with the extraction of a little dirt and the addition of a little sugar), peaches and plums in boxes and barrels, apples and pears in meal bags—not particularly well shaken (the bags I mean, no such imputation would apply to the fruit, as the numerous bruises would testify), we should come to the conclusion that there was a necessity for a little more discussion or missionary work, or something of the kind, in this direction. If men are so blind that they can't see the difference between getting forty cents a bag for their apples, shook from the trees and carried to market in bags, and fifty to seventy-five cents per half bushel for good hand picked fruit, in good, clean baskets, or \$2 to \$3 per barrel, I think it the duty of the society to send out a missionary to enlighten them. But, to come to the question, the best way of putting up fruits for the market. This depends upon the object you have in view, whether it is to make the most you can out of your present crop, without regard to satisfaction to your customers or your reputation for the future, or to give satisfaction to your customers and your own conscience, and establish a reputation that will be of use to you hereafter. If the former object is your aim, in the first place get the cheapest packages you can, as near like ordinary ones as you can, and have them hold as much less as possible and look like them. This you can do by giving special orders to the manufacturers. Then put in all your fruit, good, bad and indifferent—don't lose any of it—but be sure you get the good fruit on top of the packages, put the best side up and make it look beautiful—buyers will think it alike all the way through, especially if they have been dealing with honest men. In putting into barrels have good fruit in both ends, as some folks look at both ends when buying—you can put all the poor stuff in the middle of the barrel. If you are not likely to have fruit enough, put in a pumpkin or two or a few turnips to fill up, they will be useful to the buyer, and he will never know who did it, and it will be likely to go to the old country. Don't put your name on and you are safe. This course carefully pursued may insure you the most money for your first crop, providing you don't happen to sell to the same party twice. In that case you could go to some other market where you were not known. But if your object is to satisfy

your customers by giving them a good article, and establish a reputation for fair dealing and good fruit, I would recommend the following course: Get the very best packages of the different kinds wanted, and if you get quart baskets for berries and small fruits have them hold as near two pints as possible. If you get an order for half a bushel of plums or peaches don't try to put them up in a twelve quart basket; if you are ordering barrels to be made for apples don't tell the cooper to cut the staves a little shorter than for flour barrels, or to draw in the bilge a little. When you put in your fruit don't put it in unsorted, just as it comes from the tree; some of the gnarled and wormy specimens won't hurt the pigs, and if you make two classes after you pick them out they will sell for more than enough more to pay for the trouble of sorting. When you put them in your packages don't put all the best on top, but have it uniform throughout, and then you need not be afraid to put your name on it, or offer it to a man the second time. Pursue this course from year to year, and you will never fail to find customers for your fruit at a fair price.

Mr. Woodward, of Lockport, N.Y., thought the best way of packing apples was to lay them stem downward, three deep, and then fill up gradually, and shake them down as they were put in. The trouble with people was that they were not too honest. They endeavored to cram too much into the barrels, and just cheated the hogs.

Mr. Beadle wished to know if it was advantageous to wrap each apple separately in paper. He thought it was, as it evinced care on the part of the shipper, and buyers would place confidence in fruit thus packed.

Mr. Pettit thought apples were overpressed in barrels, and thought that something might be gained by shaking them down after each basketful was put into the barrel without pressing.

FRUIT DRYING.

The best method of preserving fruit and vegetables by drying?

Mr. Beadle opened the subject, and spoke of the old fashion of drying apples on strings, and said the market quotations showed a difference of 100 per cent. in favor of the evaporated apple of the factory. There were several patent dryers which gave good satisfaction in preparing apples for the market. This evaporating process opens up a way of disposing of fruit which could not be marketed in barrels.

Mr. Morris, of Fonthill, said that Williams' dryer gave good satisfaction. He thought the use of these dryers should be encouraged all over the country.

Mr. Woodward, of Lockport, said the apple-drying business was a profitable one, and growers would do well not to work in apples which are only fit for hogs. Again, they put unripe apples in the market. This was a bad policy, and they would lose money by it in the end. The Russets gave the largest product of dried apples. Again, dryers were now marking the name of the apple on the packages, so that buyers would know what they were buying, as all kinds of apples did not make equally good pies. Drying peaches was also found to be a very profitable business.

Mr. Bucke, said that he thought it would be a profitable business for Canadians to dry fruit for the West Indian market.

Mr. Beadle said a friend of his in California had received an order from England for thirty tons of canned apricots, showing that a large trade could be built up in fruits.

Mr. Bucke said there was a large vegetable drying establishment in St. Marys.

Mr. Smith said, in reply to a question, that the process of drying vegetables was similar to that of drying fruit. Black raspberries were a very profitable fruit for drying purposes.

SOIL FOR FRUIT TREES.

"What soil and what condition of surface soil is most conducive to the growth of apple and other fruit trees?"

The Secretary stated that soil which was adapted to some trees was wholly unsuited for others. For apple trees he should recommend a firm soil, abounding with lime. The soil made a great difference in the flavor and quality of the fruit grown on it. He could tell by the flavor of some apples what soil they were grown on. The sub-soil he preferred should be light and porous; but if he had to choose between a very light soil and a stiff clay he would take the clay for apple growing.

Mr. White found a gravelly soil some 8 or 10 feet deep produce a very abundant crop in his part of the country. Mr. Young's experience was that a clay loam, that is a clay sub-soil and sandy surface, was excellent. The trees, however, did not hold out so well as those in a stronger soil.

Mr. Geo. Leslie, of Toronto, thought a fine sandy loam was the most desirable.

Mr. Arnold endorsed Mr. Beadle's sentiments. He was certain that lime in the soil was a necessity, and, if it was not there naturally, it must be put there.

Mr. Woodward preferred clay and sand mixed.

GRAPES.

6.—What desirable varieties of grapes do well in Ontario?

The attention of the Secretary had been called to the Janesville variety. He thought its great point was that it ripened very early. The Hartford Prolific had many faults. It dropped soon, but sold because it was an early grape. The Champion was also very early, and he thought it had but one fault—it was good for nothing when it was ripened. He would eat it if he could get no better. Moore's Early grape ripened as early. It was as good as the Concord. The Massasoit ripened early and was a nice red grape, the clusters not very large, and the berries of fair size. It is best when just ripe. The Iona was *the* grape, in his opinion, for flavor and every good quality. He considered it the *ne plus ultra*, but it was late, and would not ripen in all parts of the country.

The President had never in his experience grown a good bunch of Concords at his home, in Prince Edward County.

Mr. Bucke said that the Burnet was one of the strongest growing grapes in the country, and was a great acquisition. He claimed that it ripened as early as the Concord, and was far ahead of it in flavor. Care should be taken that too many bunches were not allowed upon it.

The President thought very highly of the Brighton. Thought it lacked sprightliness, still it was a very nice fruit. The Burnet was the best grape he had ever grown on his place; it had beaten everything.

HOW TO KEEP GRAPES.

Mrs. J. C. H., of Yarmouth Centre, Elgin Co., writes to the *Fruit Recorder*:—

"There is a lady in this vicinity who is very successful in keeping grapes fresh for a long time. As I have not noticed any thing like it in the *Recorder* I thought I would tell you. It is the same as spoken of in the *Recorder*, only substituting white, dry, granulated sugar for sawdust. If a little sugar should stick to the grapes it will not spoil the taste of them, besides the sugar is not injured."

SUGAR MAKING IN ONTARIO.

In the *Canadian Farmer* of December 29th, 1880, is a very interesting account of the manufacture of syrup and sugar from the Amber cane, at Tilsonburg, County of Oxford, by the Ontario Cane Sugar Company, S. Joy, M. D., President.

It appears that this company has erected at Tilsonburg a suitable building, fitted up with the necessary apparatus for the manufacture of sixty tons of the cane every twenty-four hours, by employing two gangs of workmen. Last winter the company purchased a quantity of pure Amber cane seed, part of which was planted on thirty-seven acres of land, and the remainder sold to those who desired to give it a trial. The cane raised from this seed yielded about fourteen tons to the acre, and after being crushed and the juice made into syrup and purified, produced twelve gallons of syrup to the ton of cane, which sells at wholesale at 55c. per gallon, thus making the product of an acre in cane syrup worth \$92.40. Besides the syrup, the cane yielded thirty bushels of seed to the acre, which is worth as much as the same number of bushels of shelled corn for feed, while the leaves and threshed tops of the cane make excellent fodder. Farmers were paid three dollars per ton for the cane delivered at the factory which made the yield in cane and seed alone to the farmer equal to \$57 per acre, estimating the seed at 50c. per bushel, without putting any estimate on the value of the fodder.

The company have ascertained by experiment that if the cane is carefully housed it can be kept for months without losing any of its saccharine matter, the frost not hurting it in the least. This has induced the company to contemplate the establishment of branch factories for crushing the cane along the line of the railways running through Tilsonburg, and shipping the juice to headquarters to be manufactured into syrup and sugar.

It is gratifying to learn that these sugar manufactories are being set in operation in different parts of Ontario. There is no reason why we should not be able to make our own syrup and sugar, and thus afford to our farmers, operatives and capitalists another and most remunerative field of labor. This company show that the results of this season's operations will yield a dividend of thirty per cent. on the capital employed, and therefore propose to enlarge their capital to

\$25,000, and to add to their business the manufacture of glucose or grape sugar. Our readers will find some hints as to the profitableness of this branch of the business on page 5 of the January number of this year.

Why should not other establishments of this kind be started in other parts of Ontario? It will require a large number of them to supply this Province with the sugar that is consumed by its inhabitants every year.

PROTECTING GRAPES.

A paper addressed to the Kentucky Horticultural Society by Col. Bennett H. Young, of Louisville, Ky.

The question of protecting grapes from the ravages of insects and birds, and injury from heat and rain, has excited great interest for the past few years. Having experimented fully with two of the most prominent plans, I trust that I will not be considered out of place for laying before your honorable society the results attained. I learned from Mr. Thomas S. Kennedy the idea of using mosquito-net bags, and, in most instances, I have found them an excellent preventive against curculio. There are two difficulties with these where black grapes are concerned. First—The dust or dirt settling on the netting, which adheres close to the grape, destroys the bloom on the berry, and consequently affects the beauty of the fruit. Second—Birds can pick the grapes through the netting, and an injury to two or three grapes on the bunch, where the juice runs along the netting, mars the whole bunch. This last objection does not apply to the use of the netting with light colored grapes. The introduction of white grapes has proven a great blow to grape-loving birds, for I have never yet observed one that was good enough for their eating. My plan in using the netting has been to tear off a piece, say twelve inches wide, double it over and sew it on the open side with a sewing machine, and then run a seam across one end. My little girl last year made 1,600 of these bags, and did not complain of the amount of the work. Thus made they will last three years or more when put away. My boys, nine and eleven years of age, put them on the bunches and gather them at the top, and tie a cotton string around the ends at the top of the bunch. The boys could bag 300 bunches in a morning without feeling over-worked. Oftentimes I found it real fascinating work myself, and first-rate recreation for a June morning. The bags were put on when the grapes were about one third grown. The second method is that of inclosing in paper bags. When Mr. Bateman of Ohio, first suggested this novel plan, I considered it an absurdity. I could not imagine how a bunch of grapes, shut off from sunlight and air, could properly mature with a good color and flavor. I resolved to give it a fair trial. One fact is worth a great deal more than many theories; and starting out with prejudice against Mr. Bateman's plan, after a first trial I must confess myself a

convert and its advocate. In 1879 I put on 2,000, paper bags—in many places, on the same spur, alternating with the netting and bags. The results were most satisfactory. The grapes ripened evenly with the best of coloring, fully as early as when not inclosed, and with a flavor equal to any grown without the bags. More than this, the bunches came out of the bags with a splendid bloom and as perfect every way as it is possible for a grape to be. The paper bagging prolonged the season for, nearly a month. They are very cheap, and are more easily put on than the netting, and the grapes cannot be touched by the birds. The bag is slipped over the bunch when the grapes are about one-third grown, folded together around the stem, and a pin stuck through the folds. This is all the fastening necessary. Care must be taken, however, to make a small slit in the bottom of the bag, for, unless this is done, when a heavy rain falls, half a pint of water will get into the bag, and, standing around the grapes, will injure them, or by its weight tear the bag off. Merely pierce the bottom with the blade of a knife. Grape growers are greatly indebted to Mr. Bateman for this simple but wonderful protection to the fruit. In this part of Kentucky, between curculio and birds, there is little left to the grape grower. These bags are absolute protection from both. I also found grapes so inclosed in the netting and bags less liable to mildew. Those in paper bags were more favored in this respect than those in the netting. Those who have not tried either of these plans can not imagine the difference in the perfection of fruit secured with their use. Large bunches can be taken out of the bag without a single imperfect berry, and with a bloom upon them that is simply magnificent. Fifty cents' worth of paper bags will be sufficient for an experiment. Putting them on will require only a very short time, and, once tried, they will never be neglected.

CARBOLIC ACID FOR INSECTS.

The time has almost come again when "the little busy bugs" will open up their summer campaign, and dispute with the "lords of creation" for the "fruits of the earth." Allow me thus early to call attention to an article, the merits of which everybody knows, but which many dare not use—I refer to carbolic acid. Prepared as indicated, it cannot, I think, hurt the most delicate house plant, and it is sure to kill insect life.

My plan of preparing is as follows:—I obtain crude carbolic acid; I use it in this form because it is stronger and better for the purpose, and costs but very little (about 25 cents per gallon, I think). I pour a quantity of this dark crude acid into a quantity of good strong domestic soft soap; stir well together, and allow to stand for a few hours. I then test the compound by mixing a little of it in soft water. If too much acid has been added, oily particles of carbolic acid will be observed floating on the surface. This shows that more acid has been put in than the soap will incorporate or "cut," and more soap should be added to balance the excess of acid. No more definite rule can be given, as so much depends on the strength of the soap. Two or three teaspoonsful of the acid to a quart of soap may be first tried. I prefer to make as strong with acid as the soap will perfectly cut. A very little practice will enable any one to compound it correctly. The

refined acid may be used when the crude is not at hand. When prepared as above, make a moderately strong suds, and apply with syringe or sponge. In using on very delicate plants, should any fear be felt for the plants, they can be rinsed off after a few minutes. My first and eminently successful use of this compound was some years since, on a block of young cherry trees, some fifty thousand in number. The black aphid "came down like the wolf on the fold," only "they came not as single spies, but in whole battalions." It soon became an interesting question as to who was the proprietor of this particular block of trees—myself or the "bug Ethiopian." A disinterested observer of judicial turn of mind, judging from the general appearance of things and the very "at home" air assumed by the bugs, would have said that they had the best case. He would, at least, have been compelled to admit they had "nine points of the law" (possession) in their favor. I never saw the like before—the trees were alive with aphid. The only scarce things on the trees were leaves, there being hardly enough to afford "standing room" for all the dusky guests. However, not being a convert to the doctrine of "squatter sovereignty," I declared war, and failing to decrease the number by ordinary means, I compounded soft soap and carbolic acid, and with a single application exterminated the enemy.

—T. T. S., in *Gardner's Monthly*.

THE GROWING OF PEAS.

On the 7th of April last I planted 17 varieties of peas in rows of same length, adjoining each other, on a good black, sandy soil, which in former years had been well manured and which was in good condition the past season. The following table will give the date of first picking as nearly as may be, and the height of vine. Notes below will tell of their quality and productiveness:

<i>Varieties.</i>	<i>Height in inches.</i>	<i>Date of first picking.</i>
Landreth's Extra Early, - - - -	30	May 26.
Miggett's Extra Early, - - - -	30	May 26.
Philadelphia Extra Early, - - - -	30	May 26.
Carter's First Crop, - - - -	30	May 27.
Tom Thumb, - - - -	30	May 29.
Alpha, - - - -	30	May 29.
American Wonder, - - - -	8	May 30.
Blue Peter, - - - -	10	June 2.
Advancer, - - - -	30	June 5.
Premium Gem, - - - -	16	June 5.
Little Jem, - - - -	16	June 6.
Dwarf Marrowfat, - - - -	48	June 16.
Telephone, - - - -	54	June 16.
Champion of England, - - - -	54	June 19.
Forty Fold, - - - -	54	June 19.
Challenger, - - - -	36	June 20.
Yorkshire Hero, - - - -	30	June —

The height of all is probably greater than they would average on most soils. The time of first picking is quite accurate with early and dwarf kinds, but less so with the tall and late ones, as they ripen more slowly and fewer at a time.

Landreth's Extra Early, Miggett's Extra Early and Philadelphia Extra Early are different stock of the same pea. The two former are not distinguishable, being nearly pure, differing in this respect from the latter. The quality is excellent; productive, and best early pea for the market-gardener.

Carter's First Crop is much like the former, but has smaller pods.

Alpha and Advancer being wrinkled peas are among the finest in quality, to my taste far excelling the smooth varieties, particularly the Marrowfats, which are rank and strong. For a pea to stick, I should choose the Advancer before all others.

Little Gem and Premium Gem are almost if not quite identical, the advantage in earliness and productiveness, inclining towards the latter. They do not usually grow more than twelve inches high, and for a pea not requiring sticking, on account of its early maturing, productiveness, quality and size of pea, I would choose one of these two. A little sticking however will do them good.

Of Blue Peter almost the same can be said as of the former, and some gardeners take it in preference, but I think it does not fill into its pods so well and is therefore not so productive to the consumer, but it is three days earlier.

Telephone is a new English pea and grows extraordinarily large pods of fine quality. My tests of this and other late tall kinds were not satisfactory, on account of their growing much higher than their sticks and being thrown over by the winds and rains. It should not fail to be tried by all who have an interest in the subject.

Challenger did not strike me as presenting any gain over the other better known varieties.

Champion of England still holds its own as one of the very best late tall peas. Productiveness and quality entitle it to this high rank.

Forty Fold is very similar to the Champion; it probably produces larger peas, but as remarked before, an exact comparison of these late peas could not be made.

American Wonder, which I have left to the last, is a little wonder. It was loaded with pods, so much so that they were more conspicuous than the vines, they being the dwarfest of all. As might be expected it ripens up all at once—all its pods could be picked in four or five days, certainly in less than a week. It can, of course, be planted very close, and will please those who want a very dwarf pea. The quality like all wrinkled peas is fine. I notice an Eastern seed establishment advertising this to the trade and speaking of it as growing twelve to eighteen inches high. The true American Wonder in a moderate soil will not grow over six to eight inches. There is a pea of English origin called the Little Wonder, growing taller, which will, I fear, be sold for the American Wonder.—*Indiana Farmer.*

THE VAN WYCK SWEET CRAB.

The best of all crabs is Van Wyck Sweet Crab. It is a seeding that originated from some old crab trees growing upon the estate of Van Wyck, which had dropped their fruit; the seeds of some germinated, and young trees were carefully transplanted and cultivated. Among the number was one which was very much admired for its beauty, size, and the sweetness of its flavor. It was as handsome as a finely colored pear, with a delicate bloom upon it which resembled a plum. It had the appearance of a crab, and yet it was sweet as honey. Its general appearance and characteristics gave rise to a discussion among pomologists as to whether it was a crab or an apple. In fact, the idea generally prevailed that the crab, being in the first instance a hybrid from the apple, had gone back to its origin. Among the number who claimed it as a crab, was Mr. Fuller, and Mr. Chas. Downing, both deciding it to be a crab. But Van Wyck's crab-apple would be just the same fruit if the word crab was omitted and it was called an apple. It lacks the acid flavor which we have always considered essential to the crab, although it retains the long slender stem.—*American Cultivator*.

CORRESPONDENCE.

MONEY WELL SPENT.

Noting your kindly reminder in the *HORTICULTURIST*, I hasten to comply, and therefore enclose you the usual fee of one dollar, which to me I can truly say is one of the pleasures of the season, and further, is an investment the interest upon which is beyond computation, when taking into consideration the important work in which the Association is engaged. With regard to the plants already received, being comparatively a new member I have very little to report. The Burnet grape with me appears to be very close jointed, and consequently a slow grower. It did not fruit the past season. The Ontario apple is doing well, having made a fine growth the past season, as did also the raspberry plant received last spring. I wish the Fruit Growers' Association continued and increased success.

GEO. A. AUSTIN, *Simcoe*.

THE SORGUM QUESTION AGAIN.

I am satisfied that sorgum culture if properly managed will pay. I made fifteen gallons of first class syrup. There is a ready sale at 80 cents per gallon. I planted on the 23rd of May, and it was ready for the mill the 20th September; stalks from nine to eleven feet high. The ripest seed made the best syrup, but not so much in quantity. Now the next thing is to find out how to make the sugar. The longer it stood in the stalk the better the syrup. The only question is how to make sugar. When the plant attained about two feet in height it was attacked with a green plant louse that stayed in the centre until the seed stalk pushed them out. Now I hope to hear from some of the members more experienced in sorgum culture, and especially in the manufacture of the sugar.

JONAS NEFF, *Port Colborne*.

The Canadian Horticulturist.

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WINTER MEETING.

SECOND DAY.

The session began at 9.45 a. m. There was a large attendance of delegates, among whom were many who were unable to be present on the first day.

Mr. A. M. Smith, chairman, presented the report of the committee on fruits.

Mr. Page, chairman, presented the report of the committee on vegetables, which contained a mass of valuable information. Referring to the varieties of potatoes suitable for growth in Ontario, the report mentioned the Alpha, seedling from Early Rose, clear white flesh, fine grained, decidedly excellent flavor. Beauty of Hebron, very early, tubers good several days before Snowflake; flesh solid; yield enormous. This variety will soon supersede the Early Rose. Brownwell's Beauty is a good cropper. Brownwell's Superior ripens late; not desirable for table. Compton's Surprise, flesh white and sound. Early Ohio, seedling of Early Rose, but several days earlier. Early Snowflake, ripens a week after Early Rose, fine flesh, good cooking potato. Grange, new seedling, kidney shape, yields well, fine for table. Improved Peachblow, cross between Excelsior and Jersey Peachblow; late but good keeper. Sutton's Magnum Bonum, an English variety; great productiveness; late keeper; kidney shaped. Washington, new variety; tubers long; fine grained; productive; few days later than Early Rose. Treble X, firm; cooks well. White Peachblow, seedling of a peachblow; very late; dry and mealy. Of sweet potatoes, Yellow Nansemond, Bermuda and Early Peabody are given in order of quality. These three are best for Ontario. Growers set out plants early to be successful. Sweet potatoes succeed best in light, thoroughly worked soil, well manured; they want all the sun heat they can get. Peanuts

can be grown in our light loamy soils, but probably the season is not warm enough. The best soil for potatoes is a rich loamy sand, not too wet nor cold. The best fertilizing elements are nitrogen, phosphoric acid and potash. Nitrogen is obtained from the air, phosphoric acid from bone meal, and potash from wood ashes. Chinese Yam. This vegetable is valued much as a flowering vine. The tubers are valuable for food, boiled or roasted. They will grow a second season if left in the ground.

The root crops have become of importance in Ontario. The sugar-beet ranks high as food for cattle. In England the mangold-wurzel is taking the place of turnips as food for cattle. Root crops are of benefit in beeping the land clear.

In reply to questions, Mr. Page said he thought Paris green was best applied mixed with plaster of Paris. The Chinese yam could be procured from Bliss, New York. Mr. Arnold thought from experience the Chinese yam was perfectly useless. Mr. Saunders, London, thought the best way to apply Paris green to potatoes as a destroyer of potato bugs was by mixing it with water. Mr. Saunders spoke of a substitute for Paris green called London purple, the main ingredient in it being arsenic; but it was variable in its action, and not so good as Paris green. Mr. Jarvis, of Stratford, thought the Chinese yam was a failure, and the sweet potato a delusion and a snare in this country. Respecting the potato bug, Messrs. Bucke, Ottawa, and Jarvis, Stratford, were hopeful, saying they believed the insect was gradually disappearing from those sections. Mr. Saunders thought the insect enemies of the bug were making great war on it, and the climate last year had been adverse to its production. This appeared to be the opinion of a majority of the gentlemen present.

Mr. Page was pleased at the discussion his paper had brought out, and believed the yam would make a pretty creeper, if otherwise worthless.

Mr. Woodward thought the Chinese yam would not be a success as a vegetable, and that this climate is not suitable for the Colorado beetle.

ROSES.

Mr. Beall, Lindsay, named twenty-four varieties of roses.

Mr. J. Wellington considered the Duchess of Edinburgh an excellent rose. The impression that Canada is not a country for roses is not

well based. The ground should be carefully and deeply prepared, and bushes should be well cut back, as they require suitable winter protection.

Mr. Beadle thought that in the cloudy climate of England the rose attained to greater perfection than here, as the hot sun seemed to burn up the flowers, and would recommend shading during mid-day; knows a person who shades with canvas; the cultivators are hybridizing with the Noisette, and expect a new strain of great value.

Mr. Bucke thought the rose might be made more hardy if the hybridist went back to the initial step, and crossed the glorious roses of England and France with the native dog-rose.

Mr. Dempsey gave his experience. He planted roses in the shade, and finds that if a healthy, vigorous growth is maintained there will be very few insects; prefers cow manure.

Mr. Arnold thought the growers should begin at once and cross the foreign with the native wild rose. Burned sod makes the best manure for the rose.

Mr. Saunders would apply Paris green as a remedy for the worm, which eats the half open buds; would also apply it for the rose slug.

Mr. Woodward uses whale oil soap for rose insects.

Mr. Bucke read a paper on nut-bearing trees, as follows:

NUT BEARING NATIVE TREES.

"Can any of our native nut bearing trees be probably cultivated, either for nuts or timber, and where is the northern limit of each?"

The above question has been put into the hands of every member of the Fruit Growers' Association, and I trust it will meet with a response not only from those who are assembled here to-day, but from others also who take an interest in forest tree culture,—a subject which is awakening a deep interest, not only in Ontario, but in all parts of the Dominion, where the denudation of both the public and private domain is being carried on to an alarming extent. But deeply as we are interested, who once had, and are losing our forests, still more will those be exercised over this question who have, are, and will be settling in our northwestern plains, where, from the sweeping forest fires and other causes, forests such as we have "loved and lost" have had no existence "in memory of the oldest inhabitant."

Although the above question only calls for remarks on nut bearing trees, others have a proportionate value, and any remarks with regard to the cultivation of these, will apply equally to the seed and cone producing varieties as well.

The BUTTERNUT has the most northern limit, which is found to begin at the southern end of Nova Scotia, running north it passes about midway through New Brunswick, crossing the St. Lawrence River at Quebec and extending some thirty miles to the north of the city of Ottawa, and from thence strikes the southern end of the Georgian Bay. This tree is the hardiest of our nut-bearing species, and the area of its growth is quite extensive, and for all practical purposes it could by replanting be maintained for all time to come. Every autumn the nuts are sold by the two bushel bag on the Ottawa market, but I am unable to quote the price, never having purchased any. The timber of this tree loses the name of butternut when it is cut into boards and scantling, and assumes that of grey walnut. The expert cabinet maker, by a certain staining process, is enabled, after the wood is worked up, to make it so resemble black walnut that it requires a practical eye to tell the difference.

With regard to the cultivation of this tree, I speak from practical experience when I state it is one of the very easiest grown I know of. If given anything like a square chance it will produce nuts after ten years planting, and I believe a good saleable tree may be had of 18 inches through, at from twenty-five to thirty years from the nut.

The seeds are not in great demand at present, though I feel sure if they were advertised like other commercial products a market for them could be created, both for home, the Northwest and European planting, and I make no doubt the United States alone would absorb a large quantity, if nurserymen, private individuals and farmers knew where they could be procured.

Besides the value of this tree for timber and nuts, the feathery palm-like spread of its graceful leaves and clean looking stem, makes it a great object of beauty on the lawn, and for a wayside tree or a pasture shelter there is nothing gives a much denser shade, though probably if planted along our roadsides the ubiquitous boy might injure it whilst robbing the trees of their autumn nuts. Those gathered early in the season make a pickle fully equal to the walnuts of English manufacture for which Cross & Blackwell are so widely celebrated.

This tree has another advantage for wayside and hedge row planting, it never suckers. The bark is also often used by farmers' wives for imparting a rich brown to their home-spun yarn, before it is manufactured into stockings, or woven into fabrics.

BLACK WALNUT.—*Juglans Nigra*.—This tree closely resembles the former in shape, and the general appearance of its leaves, so much so that people accustomed to see them side by side are scarcely able to distinguish them, but by running some leaves through the hand the black walnut gives off a strong scent, whilst the butternut is odorless, the nut of the former is more spherical than the latter, and does not contain so much kernel as the former. This fact however does not detract from it as a suitable nut for a pickle. It is scarcely necessary to state that the wood is much more valuable and that its crotches and roots are greatly sought after for cabinet work, gun stock, etc., and all purposes for which it is required; it brings a high price in the market.

This tree is only indigenous to a small area, extending from a point near Port Franks, on Lake Huron, running north of London nearly in a line with the Grand Trunk Railway to Toronto, and extending along the lake shore as far east as Cobourg. I am satisfied, however, these limits could be considerably extended, but even the area mentioned would give a good many thousands of acres of waste lands and side roads for planting, should no one feel disposed to trespass on the best part of his farm for the cultivation of this most valuable of all Canadian trees.

SWEET CHESNUT.—This tall and handsome tree, the leaf of which much resembles the beech, but is more glossy and attractive, has a still more southerly range. The northern line of growth crosses the Detroit River a little above Windsor, cutting across the Peninsula to Long Point. Taking a northerly direction from this point on Lake Erie, before Port Stanley is reached, the line strikes near St. Thomas, running north of Hamilton and Toronto, curves about forty miles north of Lake Ontario and runs into that lake a little further east than Port Hope.

The nut produced by this tree, though frequently sold in stores, has not a very high commercial value, as it is smaller than those cultivated in Europe. It however serves to indicate in the same way our wild grapes do, that the better varieties might be easily grown.

Its wood is chiefly used for furniture in ladies' boudoirs and bedrooms, as it gives a bright and airy appearance to a room. Its grain is wide and open, and when oiled and varnished has a pretty light yellow color.

HICKORY, (*Carya Alba*).—The northern habitat of this tree is probably on a line with the butternut. The shell bark variety finds its chief home in the woods of the County of Lambton and West Middlesex. The tree is not easily cultivated, as it is a slow grower and difficult of transplantation, but its wood is so valuable where its toughness and elasticity are required that it commands a high price. It is principally used for tool handles, carriage spokes and fellies, and if grown in sufficient quantities would readily find a foreign market at remunerative prices. This tree is usually cut in its juvenile stages, when from four to six inches through at the butt, and consequently could be advantageously grown in plantations between trees used at a more mature age, which would be relieved by removing the hickories as required. If grown as proposed the nuts could be dropped where it was intended the tree should stand. The foliage of the hickory is of a light pleasant green; the rich leaf would add much to the beauty of the home surroundings. The nut deprived of its shell may be obtained from all itinerant newsboys on boats or cars, as no doubt my hearers can willingly testify.

I would strongly urge upon our farmers and others, especially those in youth and middle age, to begin at once, if they have not already done so, and prepare a suitable piece of ground, well fenced with some durable material such as cedar posts and barb wire, and obtain and plant some of the nut bearing specimens I have spoken of. Any soil suitable for corn or wheat, having previously had a hoeing crop such as potatoes or mangolds would suit admirably for the purpose. A half acre well plowed and planted with nuts would raise enough young trees to cover several hundred acres, or if used for roadside planting would extend a number of miles. The cost of seed, care and culture would scarcely be felt, while the beauty insured would be a lasting one, and would hand down the name of the patriotic individual who went into the business for many generations. Seeing trees grow is a thing that all lovers of nature take pride in, but to grow them oneself is a pleasure indeed. Before the white man invaded this continent all the nuts alluded to were used by the North American Indians

as an article of diet, and ancient records testify that the quantity consumed at one meal was incredible, and certainly would be unsafe for more civilized stomachs.

I have omitted to mention the acorn or quercus family, of which there are five varieties, as I do not suppose they come within the meaning of the term "nut bearing" trees.

I cannot close this paper without a further strong recommendation to all those who have not given this matter the attention it deserves, to begin at once to plant, and to plant early and plant often, and especially to commence with the nut-bearing trees. The collection of their seed is easily made, much more so than that of the smaller seeds. My friend Chief Johnson can supply any amount of either black walnuts or butternuts, and they will be found the handiest and easiest to plant. It would be well also to secure at some of the shops at once, before they become too dry, some sweet chestnuts, and pack them in moist sand, keeping them in a cool cellar until spring, when they should be planted early, in a deep rich bed, about an inch and a half deep. I will conclude this paper with a few lines written for the occasion :—

No man who owns a house or hearth,
A rood of land, a speck of earth,
Can say his duty he hath done,
If when the eve of life hath come,
He cannot point to some cool shade
By tree, himself hath planted, made
Its youth his youth in union sprung,
In middle age its praise he sung,
And ere his mortal coil shall dwell
In tenement of coffin shell,
Beneath its shade a spot he'll choose,
Where autumn skies and autumn hues,
Shall blend in harmony on high ;
And from a noble canopy,
His only epitaph shall be
The waving sigh of that dear tree.

Chief Johnson said that His Excellency had obtained nuts of the black walnut from him to send to Scotland and Hyde Park, England. He has an offer of \$1. per foot for the timber.

Chief Johnson presented a two bushel bag of curious sweet corn.

Mr. Woodward moved that the thanks of the meeting be tendered to Chief Johnson for the same.

A vote of thanks was tendered Mr. Bucke for his valuable paper.

It was decided to combine the seventh and eighth questions, viz: (7) The best variety of hardy climbing shrubs. (8) The best varieties of clematis, and the best methods of treatment.

Mr. Wellington, of Toronto, read a very valuable paper on the subject of clematis, and was accorded a hearty vote of thanks therefor. This paper will be published in full in the Annual Report.

Mr. Saunders spoke of the wild yam, having beautiful foliage, as a climbing vine. Mr. Arnold mentioned the Duchman's pipe, wistaria and trumpet flower as hardy climbing shrubs.

Mr. Wellington said the *Amelopsis Vetchii* was a good climber.

Mr. Beadle was favorably impressed with the honeysuckle as a climber. Sweet-scented honeysuckle was quite hardy, and bloomed all through the season.

A. D. Allan, of Goderich, presented the report of the committee on fruits. Owing to the lack of space it is impossible to give this interesting report, which deals with a very large number of fruits, and makes the point that cranberries, provided suitable ground is had, are an extremely profitable crop. Also that the Corinthian grape, which makes the currant of commerce, had been raised in Ontario, and suggests that it be further experimented with, as a new commercial industry might thereby be opened up.

Mr. Morris, of Fonthill, presented a report, in which he spoke very strongly in favor of the Pocklington grape, which he is cultivating, and said it was a seedling of the Concord, strong grower, sweet, good keeper, with large bunches.

The ninth question, "Are there any Canadian wild flowers worthy of cultivation in our gardens that have not been introduced," was next discussed.

Mr. Saunders recommended the Liverwort or *Hepatica*, which was a very pretty early flower. Following was the Bloodroot, a pretty white flower, valuable for its foliage. Again, we have the Phlox, free bloomer and of pleasant perfume. The Dog-tooth Violet was a pretty flower, early and elegant in form. Another pretty flower was the Black Cohosh, a very showy plant. Again, we had the Lobelias.

Mr. Arnold would like Mr. Saunders to cross the European and American *Hepaticas* and present the members of the Association with a plant. He was a great admirer of the Harebell.

Mr. Saunders also recommended the common blue violet.

Messrs. Saunders and Beadle said that they believed many had tried to grow the Trailing Arbutus in gardens and had failed, as it needs a peculiar kind of soil. It is found in Nova Scotia and New Jersey.

The next question taken up was, "Which are the five best and most profitable varieties of potatoes?"

Mr. Arnold mentioned Brownell's Superior, Dempsey, Rose, Climax, Ruby and Eureka. Some potatoes would thrive one year and not the next. Few varieties were favorites more than two or three years.

Mr. Page would choose the Alpha for an early potato, the Beauty of Hebron, Snowflake, White Peachblow (which grows earlier than the Jersey Peachblow), and the Threble.

Mr. Jarvis said he had tried a great many varieties, but came back to the Early Rose.

The following committees were appointed to report at the next winter meeting:

On Fruit Packages—Messrs. Dempsey, Pettit and Smith.

New Fruits—Allan, Holton, Arnold and Smith.

Vegetables—Page, Croil and Taylor.

Ornamental Trees and Shrubs—Leslie and Arnold.

Roses—Beall, Dempsey and Beadle.

Hardy Flowering Plants—Gilchrist, Forsyth and Bruce.

Climbers—Wellington, Arnold and Saunders.

The subject of best peas was then taken up.

Mr. Arnold said that in selecting five varieties of garden peas it will be advisable to have them follow each other in season of ripening, and in my opinion the earliest and best of all peas grown on this continent is Bliss' American Wonder. This variety is a cross between those two grand peas so well known to most lovers of good garden peas, viz: McLean's Little Gem and that tall-growing, late, but delicious and productive old pea, Champion of England. The Wonder is very early and dwarfish and very good. Second in season of ripening is the Alpha. This is a very good early pea, but it is a tall grower and requires sticking; this in my opinion is a great objection. Third, McLean's Little Gem, a very delicious dwarf-growing productive pea. Fourth, Hayes' Dwarf Mammoth. This pea grows about two feet high, and if planted at the same time as American Wonder would ripen about three weeks later. It is a very large, delicious and pro-

ductive pea. Fifth, that grand old pea, Champion of England. If it was not for its rank growth and its sometimes being liable to mildew in very hot weather, it would have no superior in its season. It ripens about the same time as Hayes' Dwarf Mammoth. On good rich soil and sticks it generally bears good crops.

Mr. Saunders was an admirer of Mr. Arnold's pea. Mr. Jarvis favored the Champion of England. He had not had good success with dwarf peas. Mr. Beall thought Mr. Arnold's pea was a very fine one.

A general discussion was then entered into on various subjects.

Mr. Orr, of Wentworth, spoke on the subject of peaches and strawberries. He said it was likely peaches would fail them, and he wished for information concerning strawberries. The Secretary pinned his faith on the Wilson strawberry. The President, who is a large strawberry grower, cultivates the Wilson almost exclusively for market.

The Secretary moved a resolution that it is the opinion of the Association that it is desirable that the law protecting birds be so modified as to permit fruit growers to shoot such birds as the robin and cherry bird, when their crops are invaded by them. Carried.

Mr. Beall had believed an open umbrella fixed near the fruit an excellent thing till he tried it; on visiting this scarecrow, however, he found a dozen or so robins roosting under it. He thought, therefore, that this plan was a failure.

The President believed that live cats tied to a string at intervals would act as a good scare; he tried it, but the dogs scared the cats more than the cats did the birds.

RASPBERRIES.

The President found in his part of the country that the Philadelphia berry was the most hardy. Herstine did very well. The Secretary said that the great defect of the Philadelphia was a peculiar dingy bloom on them which gave strangers the idea that they were mouldy.

PEACHES.

Mr. Orr, when he first started fruit growing, had intended to lay out twelve acres with peaches. He did not then know anything of the yellows. He had since been much discouraged by this disease. In his district the majority of orchards around were much affected by the yellows. He was told that clay land was preferable to sand. The Early Canada was a fine peach and doing splendidly; it was not,

strictly speaking, a clingstone. His Stump the World was an excellent fruit, pure and clear, and very good for canning. Mr. Woodward said the Salway was a very late peach, ripening two weeks after any others. He had eaten them as late as the middle of December. Mr. Orr had shortened in his trees on a rich, strong soil; it was found advantageous when the growth was heavy. The Secretary said that shortening in was found a great improvement in the Niagara district. It made the fruit larger in size and better. It made a difference in the color of the fruit by admitting the sun and air. He believed that the region of the peach could be extended by growing seedling trees from seed ripened as far north as possible.

The next meeting will be held at Owen Sound, on the 24th of August, 1881. This region is noted for its great crops of plums, and it is hoped that there will be a large attendance of members from a distance, who will receive a most hearty welcome from the members at Owen Sound.

WOOD ASHES vs. PEAR BLIGHT.

BY C. R. MATTHEW, CLINTON.

One of the fruits which attains its finest development in our favored Huron tract is the pear. I purchased a bushel of Bartlets on the street here which averaged nine inches in circumference, many of the specimens attaining 12 inches, some even 13½. Other varieties flourish correspondingly. The largest Seckels I have ever seen were from a farmer's garden in this neighborhood, and the Flemish Beauties are prodigious.

Yet this fascinating cultivation has its drawbacks. We are not exempt from the visitations of the dreaded blight. Some seasons it is rarely seen; last season it was peculiarly prevalent and destructive. This outbreak of the disease most feared by the pear grower seemed to bear out the remark of Downing, that the predisposing cause is to be looked for in the season previous, and that attacks of blight may be expected the summer after a sudden and early winter has succeeded a damp and warm autumn. These conditions had been exactly fulfilled to the late attack of blight. Three-quarters of the month of October had been summer weather here, the mercury averaging 80° in the shade at noon, and all vegetation showed a disposition to make second

growth. On the 23rd the temperature stood at 75°, and on the 24th it was bitterly cold and snowing. The rest of the month we had freezing weather. Apparently as a consequence of all this, scarce an orchard or garden in this section escaped the blight last summer. The Flemish Beauty of course suffered most. Many trees in their prime were nearly destroyed. Bartlets and Seckels went almost unscathed.

In my own garden not one of sixteen trees, embracing both dwarf and standard, were touched, while just over the fence in all directions were blighted trees. I have been casting about in my own mind for a reason for this singular exemption. It was not that my trees were of varieties not subject to blight, for among them were several Flemish Beauties. It was not that they were too young, (though they have hardly begun to bear,) for elsewhere were trees as young or younger blighted. It was not because they stood in cultivated ground, for in garden and sward trees suffered alike. It was not that my soil was drier and more congenial, for it is not underdrained. The only difference of which I am aware in the treatment of my own and the surrounding trees, is that mine have regularly received the caustic ashes from the household fires. These have been scattered to the extent of a scuttleful at a time around each tree, and the process has been repeated several times in the year. Is this the cause of my exemption from blight? While aware of the danger of insufficient data and hasty generalization I can conjecture no other. If unleached ashes are, to some extent at least, a prophylactic against the blight, how do they act? Not, I apprehend, as a specific antidote to the poisonous virus. Is it not rather that they engender such a healthy habit of constitution that no appropriate nidus for the baneful germs of the blight is found?

I present this case with all diffidence, presuming upon the invitation you have extended to your readers to send communications on matters of common interest, and hope that it may serve to elicit the views of more experienced readers of the *HORTICULTURIST* upon this vexed matter.

There is much work to be done in the fruit garden that may be preparatory to the busy time of spring. All such work as the getting ready of the trellises and supports of grape vines, raspberries, etc., may be done now with great advantage.

THE BERBERRY FOR HEDGES.

BY H. QUETTON ST. GEORGE.

About berberry as hedge plants, I still adhere to my opinion that ultimately they are the best. They require a little protection from cattle for two or three years, principally in spring, when the tender shoots are greatly relished by sheep, and they come on very slow if the grass is allowed to grow over their roots. After two or three years the plants in ordinary soil are strong enough to defy the attacks of cattle or sheep, and the grass seems to have very little effect on them, their roots striking very deep in the ground. They stool very freely, and if planted one foot apart very soon close so as to prevent pigs or other animals from going through, whilst they interlace above so that cattle cannot see daylight, and do not attempt to get over or through them. They will generally attain a height of from six to seven feet in three or four years—I mean plants taken from the nursery two years old. Strong suckers will often shoot as much as four feet in one season. I have now several miles of them here, and prefer them to any other plant for hedges in dry ground; in low, marshy soil I found they would not do.

I have also some buckthorn, but I find it very troublesome to clip their strong branches every year, and as the sheep are very fond of nibbling their leaves as high as they can reach, I find it very hard to keep them close near the ground unless they have been planted very thick, and in that case the plants are never very strong to run up. I would say that the great points of the berberry are growing so thick and strong near the ground and requiring no clipping or care of any kind when once well established, which takes about three years. Considering the great scarcity of timber, and the trouble and expense of wire fences, I would strongly recommend planting berberry wherever the soil is not too wet. In marshy places a cedar hedge planted alongside of a picket fence, which it soon embraces and supports, makes a very strong barrier and a most valuable screen or shelter from the wind.

As will be seen by a perusal of Mr. St. George's article, he claims advantages for the berberry which cannot but induce the attention of even the most prejudiced. In the berberry we have a *permanent fence*.

CORRESPONDENCE.

MCINTOSH RED APPLE.

I send herewith a sample of the above apple, which promises to be the best winter apple I know of for this and other cold sections. It is a native of Dundas, our neighboring county. I have seen the parent tree, which was taken from the roadside on the edge of the timber with nineteen or twenty more and set in the garden of Mr. Allen McIntosh, then owned by his father, some eighty years ago. All the rest of these trees have been dead for thirty or more years. The old tree is as bright and smooth as a young tree and still bearing. After a description of the Wealthy apple, Dr. Hoskins, of Newport, in the last Montreal Horticultural Society's Report, speaking of the McIntosh Red, says: "Here is a larger and apparently longer keeping apple that is hardier than the Fameuse. I am rather astonished that this variety, originated as it did in Canada, should never yet have appeared upon the tables of the Society's exhibitions. Mr. Aaron Webster, of East Roxbury, Vt., calls it a glorified Fameuse, with the color and quality of that variety. A doubled size, a hardier tree, and the same defect of 'spotting' in unfavorable seasons." I exhibited a poor sample of the fruit at our winter meeting of 1880, when, although it was only classed third rate, I had no hesitation in recommending it as one of the best for cold localities. The tree is perfectly hardy, a vigorous grower, and the fruit keeps well till April. The owner of the original tree says he remembers it well for fifty years, and that it has never missed in a single year, frost or no frost, to bear a good crop of apples.

JOHN CROIL, *Aultsville.*

NOTE.—The apple came to hand in a very damaged condition, the package well smashed and the apple likewise. It had been a beautiful apple in appearance, of large size and high color. The flavor was "good." It deserves special attention in northern localities.—ED.

NUT PLANTING.—In answer to D. B. Hoover's question in regard to nut planting, I would state that if there are no squirrels to dig them up I prefer to plant the nuts in the fall, just before the ground freezes. If, on the contrary, there is danger from the squirrels, after having gathered the nuts and hulled them, place them in a pile before they become dry and cover with four or five inches of earth. In the spring, as soon as the frost is out of the ground, plant where you want them to remain. I find that by transplanting nut trees there is danger of injuring the tap root, thereby destroying the growth of the tree for two or three years. The larger the nuts used for planting are, the larger and stronger your trees will be.—JONAS NEFF.

CAUSE OF BAD FLOWER SEEDS.

BY N. ROBERTSON, GOVERNMENT GROUNDS, OTTAWA, ONT.

Many are the complaints made about seedsmen selling bad seeds; I sow hundreds of papers of them every year from different seedsmen and collectors but very rarely find them bad, even with the most minute seeds. There are two great causes for this failure, and the directions that I give, if attended to, will obviate the necessity of seedsmen inserting such clauses in their catalogues as that they will not be responsible for failures, and will also save them much annoyance.

In this section (Ottawa) it is time enough to make a hot-bed the last week in March or first of April. Sooner than this for half-hardy annuals is of no advantage, as planting out is not safe before the 24th of May, and should not be done before the first of June. Usually at this time of the year we are free from night frost and the cold, bleak winds of early spring. I shall suppose your hot-bed made of horse manure, heated and well mixed, the fresh with the more rotten, so that your bed will sink evenly, having the box fitted to within six inches of the top (don't leave it like a cellar). In a few days the bed will be warm enough to receive the soil, but if not sufficiently heated a bucket of warm water will greatly facilitate matters. Put the soil close to the sash; if you have no prepared soil put in the frozen lumps, they will soon thaw out and leave you a nice pliable soil, in fact better than you can get in any other way. Allow the steam to escape by raising the sash. The prevailing method is to dig below the frost for material for the hot-bed, thereby getting poor wet soil, which bakes so hard that it is impossible to remove plants without the destruction of the roots. Always add sand enough to keep the soil open.

When your soil is warm rake it smooth, leaving it four inches deep. Place on the inclined sash, which should be made very sloping, in order to run off the water easily and prevent dripping inside. You will probably have more soil than wanted, which it would be well to sift over the entire surface of the bed half an inch deep. Pass a straight piece of board over the surface, drawing it level, leaving the surface uniform and smooth.

To form the drills, which should be three inches apart, take a lath or some such piece of wood the length of your bed inside; sharpen a little by taking off the corners. Press the narrow edge into the

soil according as you want the drills for the size of the seed; if fine, just mark; for larger ones make the indention deeper; this has the advantage of leaving a nice even bottom, so that none of the seeds are lost. After sowing the seed, again take the sieve and sift lightly over the grooves, and with a trowel fill them level by passing it crossways over them. In sowing, attention should be given to those seeds that will germinate in the same time, such as Phlox Drummondii, Zinnias, Asters, &c. Succulents, such as Portulaccas, Mesembryanthemums, &c., keep to one side, or where they will be in such a position that they can get plenty of sun, and when watering as little water as possible.

Now comes the time when most bad seeds are made. The general plan is to allow the sun full force into the frame, and try to keep the soil wet by continued watering. Neglect for one hour to keep the soil damp at a time when the seeds are germinating is fatal; besides, a hard crust forms on the surface on account of the frequent watering. The plan I follow is to cover up the frame in such a way that the direct rays of the sun are not admitted. Seeds will germinate as well in the dark as in the light. As soon as they are up remove the shade, throwing a few spruce branches over as a partial shade for a few days. If steam occurs allow it to escape by raising the sash on the sheltered end in the heat of the day; if this is not attended to you will have it damp, and lose your plants. Here again you will find the advantage of placing seeds together that will germinate at the same time, as you can still keep those partially covered that have not yet come up. If you attend to these directions your seedsman will always have good seeds, and you will be made happy by success.

In transplanting into another frame before putting them outside, (which should be done in all cases,) if you have not another frame make a bottom of warm manure, box it around so that it will stand well over plants of a good size. Put soil on the top of this, deeper than directed for hot-bed; nail a few strips across so that you can cover with boards in case of frosts or cold winds, which we generally have in the month of May. This plan I prefer to planting again into a frame, as the plants are hardier and receive little check on planting out.

The other cause of failure more generally belongs to outside sowing, which I will treat in another number, with transplanting, bedding, &c. I would not advise seeds to be bought in distinct colors—you can get some mixed, ensuring greater variety at a much less expense.

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ONTARIO AGRICULTURAL COMMISSION.

The Report of the Commissioners appointed by the Governor in Council in April last "to inquire into the Agricultural resources of the Province of Ontario, the progress and condition of Agriculture therein, and matters connected therewith," is now before the public. It is divided into several parts for the sake of convenient reference, Part I. being the Report proper of the Commissioners, setting forth their doings and the results of their inquiries under the heads of Fruit Culture; Cultivation of the Grape and Native Wine Making; Forestry and Arboriculture; Insects, injurious and beneficial; Insectivorous Birds; Bee Farming; General Farming; Dairying; Horse Breeding; Poultry and Eggs; Salt in connection with Agriculture; Gypsum; Bone Dust and Phosphates; Special Crops; Agricultural Education and Farm Accounts; Meteorology; Muskoka, Parry Sound and Manitoulin; Diseases of Stock, and Stock Registers; Stock Laws; and some concluding remarks on other points of interest. The remaining parts contain the evidence taken by the Commissioners upon the several subjects embraced in their report, so brought together under appropriate heads that anyone can readily find the testimony upon any given subject which he may desire to investigate.

Part III. will more immediately interest the readers of the CANADIAN HORTICULTURIST, in which will be found the evidence relating to Fruit Growing and Forestry; Grape Growing and Wine Making; Insects and Insectivorous Birds; and Bee Farming. In obtaining the evidence relative to fruit growing, the Commissioners have endeavored to procure the evidence of planters resident in all parts of the Province, and by recording the name of the person giving testimony, his place of residence and section of the country with the fruits of which he is familiar, every reader will be able to form an intelligent opinion with regard to the fruits he may hope to be able to grow successfully where he resides.

It will be quite easy to follow the grouping adopted by the Commissioners in their Report, and ascertain with considerable minuteness what varieties are found to be adapted to the Niagara district; to the Counties of Norfolk and Elgin; of Kent, Essex and Lambton; of the Huron district; of the Owen Sound district; of the Counties of Perth, Middlesex and Oxford; of the Brant district; of the Toronto district; of Durham and Northumberland; of the Bay of Quinte district; of Dundas, Stormont and Glengarry; of Renfrew; of the Lindsay, Ottawa and Muskoka districts; and of the Manitoulin Islands. This will be found to be sufficiently minute for all practical purposes, and to give the present state of information upon subjects of great interest to everyone desirous of cultivating fruits.

All praise is due to the Honorable the Commissioner of Agriculture of this Province, for the labor and thought he has bestowed upon this matter, in asking for such a Commission, and carrying it out to a successful issue. The information here brought together is worth to the agriculturists and fruit growers of Ontario, if they will only make use of it, many times its cost to the Province; and there will ever remain the debt of gratitude to the Commissioners who have so faithfully performed the task assigned to them, and laid before the country as the results of their labors a report of which both they and we as a people may justly feel proud.

THE BRIGHTON GRAPE.

It seems that this variety does well at Trenton, County of Hastings. Dr. Henry W. Day, of that place, writes: "I have now in my garden a Brighton grape vine planted in 1877. It is an excellent grower, and has wintered well by having ordinary winter protection. The fruit is of excellent quality, and the vine is an early and abundant bearer. I think the vine is one that should be cultivated in this section, as it appears quite hardy enough, and the fruit ripens early and well."

DISTRIBUTION FOR 1882.—One of our friends, a lady, suggests that one of the articles for distribution in 1882 should be a rose. A member says, "I am very much pleased to see the Directors giving members the privilege of selecting a certain plant from a given number, it is sure to give satisfaction."

AN ABRIDGED FOUR HUNDRED YEARS HISTORY OF THE STRAWBERRY.

BY CHARLES ARNOLD, PARIS, ONT.

Shakspeare informs us that the Bishop of Ely's garden in Holborn was distinguished for the excellent strawberries it produced, even as far back as the reign of Richard the Third (1483). And judging from the remarks of an old writer in 1578, it would appear that the only strawberries known at that time were the Wood strawberry and perhaps the White Alpine. He says, "Strawberries grow in shadowy woods and deep trenches, and banks by highway sides. They be also much planted in gardens. The fruit is green at first, but red when it is ripe. Sometimes also you shall find them verry white when they be ripe; in taste and *savour* very pleasant." Another old writer in 1597 speaks of the "Red and White Wood and the Green Fruited; the two last not to be found save only in gardens." Johnson, in his edition of the work containing the last statement, published in 1633, does not mention any other variety. Another writer in 1656 mentions the Virginia Scarlet (or Canada) and the Bohemian. This last variety is supposed to be the Hautbois, and he says, "this variety hath been with us but of late days, and is the goodliest and the greatest."

It would seem that up to this time no attempt had been made to grow new varieties from seed or from crossing the different kinds. And no mention is made up to this period, so far as I have been able to read, of strawberries being imperfect in their flowers, except when attempts were made to grow them under glass. Then some gardeners used to complain bitterly of their strawberries "running blind," as they called it.

The first improvement made by growing strawberries from seed was about the year 1660, a variety called at first the Clapperon, and grown by a person by the name of Fressant, a Frenchman. This variety was obtained from the seed of the Wood strawberry.

But little attention seems to have been paid to growing improved varieties by hybridizing until the time of Andrew Knight, about the beginning of the present century. In order to show what confused ideas occupied some men's minds with regard to strawberry blossoms, and to show also what progress has been made the last forty years in

growing new varieties with perfect flowers from hybridized seed, I will give a quotation from the English Gardeners' Chronicle of 1843. The writer says: "We have observed in almost every variety of strawberry that we have seen in cultivation, that some of its plants occur occasionally bearing all male blossoms, and others none but female blossoms." "By far the greater number of plants in each variety have separate *male and female flowers on the same plant.*" I will simply remark, with regard to the last quotation, that no such imperfect flowering strawberries have ever been grown by any Canadian in my time, and I question very much if any person has ever seen in America perfect female and male flowers growing separately on the same plant. But it may be just as well to remark that very few if any strawberries of English origin have ever proved perfect or satisfactory in their flowers in this country, and not until 1834, when Hovey, of Boston, Mass., introduced his seedling, was any real progress made in growing strawberry seedlings in America. Even this was a pistilate variety, and was very apt to be barren, or bear very imperfect fruit, unless some staminate variety was grown near by. But with a portion of the bed being planted with our wild strawberries, Hovey's Seedling would produce a very fine crop of large and delicious fruit.

The great improvement of the Hovey over all others of its day caused many intelligent persons to grow seedling strawberries, with a view to getting hermaphrodite varieties, (that is strawberries bearing flowers with stamens and pistils in each flower, instead of in separate flowers,) and thus prevent barrenness. It will no doubt sound strange to many readers of the HORTICULTURIST to be told that in this year, 1881, there are such things in Canada as barren strawberry beds; and yet that there are a great many of these barren beds in every county in Ontario I have no doubt. The only cause of this barrenness that I know of is the imperfection of the flowers, *i.e.* purely staminate or purely pistilate flowers.

In every old strawberry bed there will be sure to be a number of seedlings spring up, and it often happens that many of these plants bear such imperfect flowers as never to bear fruit of any kind; yet they are very prolific in runners, and these runners are frequently the largest and healthiest plants in the bed. Now it will easily be seen that to plant a new bed from runners grown in such a bed as this will be at the risk of having a barren strawberry bed. Although such

plants from an old bed can frequently be got from some kind neighbor for nothing, they may in the end prove very expensive plants, and the persons using them will be very apt to amuse themselves practicing false economy.

To attempt to enumerate all the varieties of strawberries that have been originated, named and thought worthy of cultivation in Europe and America since the introduction of Hovey's Seedling, to say nothing of the tens of thousands that have been raised and rejected after a year or two as unworthy of even a name, would fill a whole number of the HORTICULTURIST. Downing alone, in his late edition of "Fruit and Fruit Trees of America," describes some four hundred varieties. As the names of all the leading varieties in cultivation at the present day can be found in most nurserymen's catalogues, I will not name them, but will merely remark that strawberries, like many other of our best cultivated fruits, seem to arrive at a certain degree of perfection, health, vigor and productiveness, and then to degenerate to such a degree as to become comparatively worthless in a few years; therefore a constant renewing by cross-bred seedlings seems necessary to keep up the health, vigor and fruitfulness of the species.

The progress that has been made in flavor and productiveness the last three hundred years is very difficult to ascertain, but the difference in the size of the fruit and value of the seed is very remarkable. In 1593 Thomas Hyll writes: "Strawberries be much eaten at all men's tables in the summer with wine and sugar, and they will grow in gardens until the bigness of a mulberry." The English mulberry is about three-quarters of an inch in diameter, and some of our newest and best varieties of strawberries will grow from one inch and a half to two inches and a half in diameter. There can be no doubt therefore that we have made great improvement in the *size* of the fruit in three hundred years.

But if, as an old writer says in 1578, strawberries were "in savour (or fragrance) very pleasant," and we should judge alone from the fragrance of that very popular variety of late years, the Wilson's Albany, most persons would incline to the belief that we had retrograded on this point. We are thankful, however, that many of the newer varieties have a delicious fragrance as well as taste.

In regard to seed, the Alpine strawberry is said to have been introduced into France and England about the year 1764, and Mr.

Duchesne, writing in 1766, says: "The King of England was understood to have received the first seed from Turin." "It was such a rarity that a pinch of the seed sold for a guinea."

CRANBERRY PIPPIN.

A member asks, "What kind of an apple is the Cranberry Pippin; give a general description of it." The following is the description given by Downing, the best authority we have. "Fruit medium, roundish oblate, regular; skin very smooth, light yellow, with a bright scarlet cheek; flesh white, moderately juicy, brisk subacid. It is only second rate in point of flavor, but it is an excellent cooking and market apple. Good from November to February."

Your Editor grew this variety some years ago, but he found the young trees to suffer severely from our winter frosts. J. J. Thomas, the horticultural editor of the *Country Gentleman* says the quality is poor.

JAPANESE SQUASH.

A new squash has recently been introduced into this country from Japan. It is a very distinct variety in every particular, and has thus far proved a valuable acquisition to our list. It is of the turban class, and grows of moderate uniform size; stem very long and thin, woody and angular, set in a rather deep, circular depression; surface deeply ribbed; skin warted in its early stages; color dull orange green when fully ripe. The flesh is of the deepest orange hue, and flavor most exquisite, dry, sweet, fine grained, and has positively no fibre, a quality not found in any other variety. Another peculiarity of this valuable variety is its thick solid flesh, leaving very little room for pulp, and having very few seeds, which are small and not so white and plump as the Hubbard. It is also a late keeper, though not so late as the latter, not having such a hard and shell-like skin. For pies it cannot be surpassed.—*Michigan Farmer*.

AN ORCHARD may not do well for various reasons. Sometimes the land needs draining, and the putting down of a few rows of tile will be all that is necessary. The soil may be either originally poor, or made so by excessive cropping, and the trees are suffering from partial starvation. If the orchard is in sod—and such orchards frequently are—spread a heavy coat of manure upon the surface, or spread ashes or lime upon the soil. Try this treatment and note the result.

THE PANSY.

BY REV. VINCENT CLEMENTI, PETERBOROUGH.

Permit me to make one or two additions to the interesting paper by Mrs James Davidson on the Pansy, comprised in your last number.

I have always found that *piping* is a very satisfactory method of propagating pansies, where the blossoms are really fine. This operation should be performed yearly, in the month of August, and the pipings should be planted, as Mrs. Davidson suggests, in a bed exposed to the north, and protected by a pot, or a box with a sliding glass top. This latter may be made any convenient size, and I have found it very useful for protecting a variety of plants, especially the choicer and tender vegetable plants, when first removed from the hot-bed. After the pipings have taken root they may be potted. The pansy, however, ought to be able to stand any amount of cold, as it is, I believe, a native of Siberia.

Another suggestion I would offer, is not to plant pansies in the same place, even for two consecutive years; they like constant change. Perfect drainage, especially if the soil be not percolating, is essential to their health, as the chief disease they suffer from is rotteness or decay in the roots.

I have never seen pansy blossoms in Canada anything like as large as those that are found in English gardens,—why, I cannot tell. I recollect, however, that a friend of mine, who was a great pansy fancier, usually rejected all but about a dozen plants from his bed of seedlings some yards square, after the appearance of the blossoms. He used to say that the pansy had as many “points” as a horse.

THE CULTURE OF HOUSE PLANTS.

BY N. ROBERTSON, GOVERNMENT GROUNDS, OTTAWA, ONT.

Almost daily I receive letters enquiring about treatment of plants, and having visited many of the complaining parties, I find that the troubles arise from various causes, for the prevention and treatment of which I will endeavor to explain with as much simplicity as possible.

The prevailing practice seems to be potting with old worn-out soil from the garden, with little nourishment, hard, stiff and full of insect life. Others use black muck from a swamp, or surface soil from the

woods; these two are light without substance, and generally poor. Portions of them might be useful mixed with other soils if done by an experienced hand. I am aware that it is very difficult in cities to procure suitable soil, but some trouble must be experienced if you expect to be successful. Then instead of going to the woods or swamp, go to some old pasture, or place where you can find a nice pliable loam. Procure this soil some months before you require to use it, mixing with half rotted manure and one-fourth clear warm sand (avoid cold, stoney sand), and put it away in some corner or cask. Turn it over a few times before using, and mix it as well as possible. Never use stiff clay soil. Make your compost so that it will not bind in the pots, and let the soil be clean and free from coal ashes and such like.

No difficulty need be experienced in the country with respect to soil. Take a load or two of turf two inches deep from some old pasture, in the corner where cattle lay down at night, and pile it up, adding between the layers of turf as much rotten manure. This should be done twelve months or more before wanted. As much can be made at one time as will serve for a number of years. After lying for four or five months, slice the heap downwards as thin as possible with a spade, and gather compactly into the heap again, exposing as little of the turfy substance as possible. Add sand to this as before directed, so as to make the soil nice and free to handle. Never put the heap where leaves will drop upon it. There is also danger of the soil being too light, in which case the plants will grow, but the flowers will be few, small and of little show. Soil, then, is one great point of success, and if you have good soil other difficulties will be easier to overcome, and will well repay your extra trouble.

Potting is another thing of great importance, and should be attended to with great care. I will describe the mode of potting so simply that no one can make a mistake. Wash the pots if they have been in use before, no matter how clean they may look, as insect life may be lurking about that will soon find out your plants when they are taken into the house. By doing this you may save yourself much trouble. After washing the pots let them dry, and then place a piece of broken pot to well cover the hole in the bottom. Now break a lot of pieces of old pot as small as ten cent pieces; into a five inch pot put one and a half inches of these; more in larger ones. Over this place some fibre or moss, to prevent earth getting in through the drainage. Have the

soil moist, neither dry nor wet. If the soil is very dry and the plant roots very plentiful you would have difficulty in wetting some of them; if wet, then the packing will make it close and hard. Now put soil enough in the pot to bring the plant in a proper position when filled; pack the soil as you fill, knocking the pot on the bottom, so that you shake the soil perfectly among the roots. As winter is the time house plants are most looked to, if the plants have been where worms can get at them, be sure that you take them all out, or your drainage will be stopped, the soil soured by stagnant water, and the plant become unhealthy. The health of the roots is the first and most important point. Without healthy roots you may never expect healthy tops. Plants are frequently destroyed through the summer months. Some are plunged out into beds in the spring and recklessly torn up in the fall; as the feeding roots are either through the bottom or over the top of the pot, it is impossible to save them. Others are kept on a stand basking in the sun, so that the strictest attention cannot keep them from being dried up and ruined. Many are potted in this way with the appearance of good roots when they are already dead and dried up. The best plan for winter plants is to stand them in some cool sheltered corner, away from the direct rays of the sun, during the summer, giving little or no water, but just sufficient to keep them from flagging. Do not set them under trees or other places from which water may drip upon them.

Potting should be done early in September, shaking away as much of the old ball as you can without breaking the roots, and repotting with fresh soil. Beware of over-potting; many plants suffer more from this cause than any other. Give room to allow fresh soil around them if the ball is well matted with roots, if not reduce the size of your pot. It does no harm to knock the plant out on your hand and examine the roots. If you see at any time the appearance of worms, look round the ball or under the crocks and you will be sure to find them. When you have finished potting, stand the plants back in some warm shady corner, and keep from the sun for ten days. Give a good watering by thoroughly wetting the ball, and then give no more than will keep them from fading until you see them starting into growing order. Before putting them in the house be sure that they are free from insects. Lay the leaves flat upon your hand, and wash with a soft brush or sponge and warm water, especially the underside

of the leaves and stems, taking care not to break the foliage. This is sure to keep them from insects for a considerable time, which are so hard to overcome in the house.

“How often should I water my plants?” Not until they are dry, which can be ascertained by seeing if the top of the pots look dry; or if you will weigh them in your hand, you will find by practice whether they are wet or not by the weight. Too much water is the greatest cause of poor success with house plants. If a plant becomes unhealthy, drops its leaves or turns yellow in color, you have been giving too much water. But this difficulty may be easily overcome if the drainage is proper. If the plant appears as described withhold the water; do not let it fade, but give no more than will keep it from doing so until you see it fairly started into good health.

You cannot expect plants grown in the dwelling house to look as well as those in green-houses, as they do not have the same light overhead, nor the moist air and good washing with the syringe, and yet I have seen many that nearly come up to the best of green-houses. You can do much towards keeping the foliage clean by standing them in a tub occasionally, and sprinkling them with the watering-can, which not only adds much to the appearance, but also to the health and vigor of the plant. When sweeping the house, dust will gather on the leaves, and you will also find it beneficial to wash them with a sponge several times during the winter. Do not make a practice of watering your plants at stated intervals, but first ascertain whether they require it. Let the plants have plenty of room, and turn them around occasionally, so as not to have one side always to the light, and they will have an equal, bushy appearance, and not be all one-sided. Many attempt to ventilate their plants by opening a window and allowing the cold air to rush in upon them. Avoid this, unless the outside air is warm and without cold winds, as they are rendered very tender by their indoor treatment, and are very easily injured by any sudden change. If you use saucers under the flower pots, never allow water to stand in them.

The green-fly is perhaps the most troublesome insect enemy of the house plant cultivator, but they can be overcome in various ways. Take a piece of paper large enough to cover the top of the pot, cut it across to the middle, and then draw it over the pot, bringing the stem of the plant in the centre of the paper. Then commence at the

top of the plant, and brush the insects off with a soft hair brush. When done, remove the paper with the insects on and destroy them. It is always well to remove some of the old soil, and put fresh on the surface. Another plan is to procure a close box with a lid (if not tight make it so by pasting paper over the cracks). Make a hole in the side to insert a tube, and puff tobacco smoke into the box until it is full. Now stop the hole and let the plants stand for an hour or more. Then take them out and shake them well, removing the soil from the surface of the pots as before directed. This will have to be done in a warm place, (a cellar will do,) so that the smoke will not get through the house.

The red spider is not so well known; being very minute it is not easily detected until much damage is done. If you see small yellow spots on the leaves of the plants, and if they are getting dry and burnt looking, turn the underside of the leaf up and you will see small red dusty specks. Take a brush or sponge and wash with warm water, as he does not like moisture. In a greenhouse, where the place is kept moist, he never appears. Thrip and scale are not found very often on house plants, neither is mealy-bug. Cleanliness will mostly prevent all these.

It may seem to some to be a great deal of trouble to follow all these instructions, yet I find people every day that would do twice as much to see their plants prosper. Gishurst Compound, Fowler's Insecticide, hellebore powder, &c., are used with much effect for the destruction of insects, but I prefer frequent washing to any of them, as it not only destroys the insects but gives fresh life to the plants.

I shall at some future time treat of plants best adapted to house culture, and their treatment for winter flowers.

QUESTION DRAWER.

DEAD BARK.

Last spring some of my trees had dead patches of bark on them, what could be the cause? Would lack of drainage cause it?

Anything that would render the tree unhealthy would be the remote cause, and nothing will make an apple tree unhealthy more surely than insufficient drainage.

THE VICAR OF WINKFIELD PEAR.

BY JOHN M. McAINSH, MISSOURI.

As the Vicar of Winkfield pear has been widely disseminated throughout the country, and is offered for sale by our leading nursery-men, it is well that intending pear growers should be acquainted with its true character—its merits and faults. My description is given from some fifteen years experience with it. To begin with, the tree is a good healthy grower, and naturally forms a beautiful shaped tree. Although not ranking among the very hardy sorts, it is sufficiently hardy for a large part of Ontario; at least I find that it is sufficiently hardy for this section of country. It is an enormous bearer; in fact this is one of its faults, for if allowed to bear at will, every second year it will be loaded with a larger crop than the tree can bring to perfection, consequently they are of poor quality and small size. But where the fruit is properly thinned out, and good cultivation given, it will be of good size and handsome appearance.

If the quality of this pear was equal to its good growing qualities and its productiveness, it would deservedly stand in the front rank, but unfortunately this is not the case. As a dessert pear it is generally of poor quality, but occasionally is good; in this respect it is very variable. As a cooking pear or for preserving it is very good, and this I think is the only purpose for which it can be profitably grown. There is one peculiarity about this variety which it is well to know, and that is that when the trees are young and just coming into bearing the fruit is of very poor quality, but as they acquire age the quality improves. If my Vicars improve as much in the next ten years as in the last ten I will be pretty well satisfied with them. The productiveness of this variety, its preserving qualities, and the season of its ripening (Dec. and Jan.) will recommend it for cultivation in a limited degree, but those who want a pear of good quality in all respects must turn their attention to some other variety.

PRINCESS LOUISE APPLE.

We have received from Mr. Linus Woolverton samples of this apple, which was exhibited at one of the winter meetings of the Association, and very highly commended in the Report of the Committee on new fruits. In form, this apple is nearly conical, flattened somewhat at both

ends. The stem is not very stout, and projects beyond the cavity, which is deep and regular. The calix is closed, and set in a shallow, slightly wrinkled basin. The skin is smooth, free from all blemishes, and has a very bright waxy lustre, as though it had been highly polished. The color is a clean, bright carmine, on a transparent light yellow ground. The surface is moderately sprinkled with light grey dots. No description will convey any adequate idea of the extreme beauty of this fruit, which is so very striking that it would command attention in any market from its attractive appearance. But to this rare beauty of appearance it adds excellence of quality. The flesh is pure white, like that of the Snow apple, tender, juicy and nearly as melting, with a richer flavor and higher aroma; indeed, one of the most fragrant of apples. Mr. Woolverton informs us that the tree is about eight years old, is a chance seedling of the Snow apple, has borne for three years, the crop being heaviest in alternate years, and that it has established its character for uniform beauty and excellence of fruit. He considers it to possess all the good qualities of the Snow apple, besides being more beautiful and a better keeper. We fully coincide with him in the opinion that it is destined to take a leading place among our Canadian varieties, and are confident that this fruit will command attention in the English market whenever it may be produced in sufficient quantity.

How often it is that our best fruits are nature's waifs, springing by chance from some neglected hedge-row, as if to laugh at our scientific processes of cross-fertilization, and mock our boasted skill.

LETTER FROM AN OLD MEMBER.

BY W. C. SEARLE, CLINTON.

As an old subscriber I thought I would give my views on the paper, and also a few things in connection with fruit growing in this section. I am much pleased with the HORTICULTURIST, as it is the means of getting at the views of some of the fruit growers, but am sorry to see that so few take such an excellent publication. I have found that during recent years the growing of fruits, except apples, in this part of the country has not been profitable, owing to the late spring and early fall frosts, which are so injurious to grapes particularly, and the thermometer going down to 20 degrees below zero. Last season was the most favorable one we have had for some time for ripening grapes; I ripened a fine lot of the Isabella. The plum trees are fast dying out, and the crop getting less, except on young

trees coming in to bearing. The old trees are affected with the rot, black-knot, the borer, and curculio. Pear trees are somewhat affected with the blight, a good many being destroyed. The peach trees have also been badly attacked by the borer, and parties do not seem to know anything about remedying this as they do not attend to them. Some medium peaches were raised last season in Goderich township, near Lake Huron; peaches near the water seem to grow better than those further inland. Apple trees are also affected by the bark insect, codlin moth, tent caterpillar, leaf curler, and also the one that lays its eggs in a cluster, but not so bad as they have been before. Large quantities of apples have been sent from this section to the east, west and north-west. The common cherries do well, but the caterpillar and leaf slug affect them. I notice in numbers of gardens that the red and white currants are neglected, and consequently dying out, they are afflicted by the saw-fly and pith worm. What is good to destroy the green aphid on the black currant? I have tried the tree form, but the snow breaks them. The borer is busy in the maple and locust street shade trees. The raspberry bush I received last year from the Association is growing fine, as is also the Ontario apple. Last year my Burnet grape had on a peck of grapes, but most were mildewed; I used sulphur, but it was no use. The quality of the grape was not bad. I kept some till 14th February. The Flemish Beauty and Clapp's Favorite pears both fruited two seasons; the Grimes Golden Pippin apple has twice fruited; the Salem grape has fruited twice, also Downing gooseberry and Glass' Seedling plum, but I lost some of the latter before maturity. I have 12 varieties of the large English gooseberry, imported, which I am testing; those already fruited are subject to mildew. To prevent gooseberry and currant bushes breaking down with the snow I grow them in bush form, with three stakes dipped in tar, round the large bush, wired through the stakes for bushes to rest on. The small bushes I tie up with wire in the fall. I have over twenty kinds of grapes fruiting, some bunches of which weighed 12 ounces. I prune them in the fall, lay down, and cover with leaves, straw and earth. When up they are protected from the north winds by an eight foot fence. Very few varieties will live and fruit with the general culture given them here. I trim my currant bushes by cutting them down to the roots with a chisel. Many tree pedlars are no better than swindlers, in selling trees adapted only to a warmer climate, and offering rewards for the best fruit grown therefrom, when there is no chance whatever for the fruit to properly mature in a northern climate. I am testing seven kinds of raspberries. I think that the Fruit Growers' Association should go in for cheaper freights; it cost me \$1.00 to get a bushel of peaches from St. Catharines or to send a bushel of plums there. Many mistakes are made in reference to the names of different fruits, by nurserymen at different places using different names for the same kind of fruit. I noticed recently that a nurseryman giving evidence before the Agricultural Commission stated that black currants were worth \$4 per bushel. If the statement refers to country places he is wrong, because all they can generally be sold at is 5 cents per quart. I have found bees and wasps injurious to grapes, and also saw them destroying early peaches. Should fruit growers encourage

the raising of bees, or would it not be to their interest to enter on a bee crusade? Give us your opinion on the matter, Mr. Editor. I agree with one of your correspondents, who states that the Provincial in giving prizes for fruit should make some discrimination between cold and warm climates, for it is not fair that fruit grown under unfavorable circumstances in a northern latitude should be required to compete on equal terms with that grown in a southern climate. The English sparrow destroys fruit buds when the ground is covered with snow and it has no other food, the opinion of Mr. S. Hunter, of Scotland, Ont., to the contrary notwithstanding.

CORRESPONDENCE.

APPLE TREES ROOTING IN SUBSOIL,—BURNET GRAPE, &c.

I notice Mr. J. A. McKay's suggestion to put flat stones under apple trees when planting. This might prevent the roots getting into the clay for a few years, but it no doubt grows over the stones into the clay afterwards. My trees have not suffered yet from the clay soil, and I don't think it will do them any harm. The Burnet Grape has not fruited this year; I don't think it will succeed here. I planted in the same ground last year two Hartford Prolific, two Agawam, two Salem, two Beaconsfield, five Concord, nine Champion, all two year old vines, and I find this year the Agawam and one Beaconsfield dead; the other Beaconsfield has done well, and looks very like the Champion. The Salem and Concord have not fruited yet, but the Champion grew vigorously—one had twenty bunches on it, but I only allowed six to ripen, the weight of which were three ounces each. They were ripe 27th August, and seem to be best suited for this district for hardiness, fruitfulness and early ripening. The Saunders Raspberry was accidentally cut when a foot high, and is not likely to succeed. I have tried several kinds of raspberries, but cannot grow them either on sandy or clay soil; the new shoot always dies away. There are plenty of wild ones growing on the sides of banks and creeks, so I suppose they require shelter. I have about 1200 Houghton Seedling Gooseberries, four years old, planted on clay loam five feet apart, and am surprised to find a good deal of the fruit mildews, although I have seen it often stated that this variety never mildews.

J. W. CUMMING, *St. Hilaire, P. Q.*

REPORT ON PLANTS RECEIVED.

The Swayzie and Ontario apples have done well, as also have the Clapp's Favorite pear and the Diadem raspberry. Saunders done rather better, but I have seen no fruit yet on any apple, pear or raspberry. The Burnet grape vine is growing, and set a few bunches of fruit last year, but it all dropped off without ripening; if it does the same the coming season I will consider it unsuitable for this section.

ALEXANDER LAWRENCE, *Drumellie, Port Elgin P.O.*

GRAFTING IN THE TOP.

Mr. D. Bell has a farm about six miles north-west from Cobourg. Last fall he called on me offering some very fine Spitzenburg apples. I asked him how many he had. He said thirty-two barrels. I then asked him how many trees he had gathered them from. He said five. And how many did you get from the five trees last year? He said eighteen barrels. As I knew the Spitzenburg to be a poor grower, I asked him to explain. Mr. Bell said, about twenty-six years ago he planted about three and a half acres of apple trees, consisting of Golden Russet, Spitzenburg, Northern Spy, Greening, Red Canada, Talman Sweet, Baldwin, &c., &c. Twelve or fifteen years ago he cut back to about four or five feet from the ground five seedling apple trees that were growing in the garden, (they were about eight years old,) and grafted them with the Spitzenburg, hence the above result. He stated that the Spitzenburgs that were planted twenty-six years ago are nearly all dead, as are also the Baldwins, but the Spitzenburgs that were top-grafted are almost as large as the Talman Sweet that are in the Orchard, and are fine and healthy. Mr. J. W. Johnstone, Campbellford, called on me a few days ago, and I stated to him Mr. Bell's success in top-grafting. He then told me how he had succeeded with the Northern Spy. Seven years ago he cut back a seedling three or four years old and grafted the N. Spy on it. The fifth year after grafting he gathered $1\frac{1}{4}$ barrels, the sixth year $1\frac{1}{2}$ barrels, and last fall $1\frac{1}{4}$ barrels. Four years ago he top-grafted three seedlings, and last fall he gathered about half a barrel from each, showing that top grafting is best for some varieties. Through Mr. Johnstone's recommendation, a Mr. Burgess, of Baltimore, (five miles from here) planted ten acres of seedlings last spring. When they are three or four years old he intends to top-graft all of them. If any one wishes to try top-grafting let him sow the apple seeds next spring. The following spring select such as have made a good growth and have healthy stocks, and I think they will find top-grafting to be superior to root-grafting, especially for the north.

J. D. ROBERTS, *Cobourg.*

ENLARGING THE HORTICULTURIST.

I am pleased with the HORTICULTURIST, which comes quite regularly, but I would like to see it enlarged, even although we should be obliged to pay more for it. Send me the *Hydrangea paniculata*. I would have taken the Wealthy apple, but last year I bought a number from Dr. Hoskins, which so far have done well. I will report later on, as this is the place to try them, as while I write the thermometer stands at 22 degrees below zero, and it sometimes goes to 40.

A. A. WRIGHT, *Renfrew.*

Several valuable communications are unavoidably crowded out of this issue. They will appear in the June number.

The Canadian Horticulturist.

VOL. IV.]

JUNE, 1881.

[No. 6.

CHAMPION, *alias* BEACONSFIELD GRAPE.

The following remarks are copied from the Report of the Fruit Growers' Association of Abbotsford, Province of Quebec, and shows in what esteem the Champion grape is held amongst them. It also proves beyond question that the Champion and Beaconsfield are one and the same grape.

"CHAMPION.—This variety was also upon the tables at Abbotsford, and on account of its special earliness attracted special attention. It was also exhibited in 1877 by L. W. Decker, of Montreal, who had bought it in 1871 from Messrs. Shanley & Gallagher. Since then it has been largely imported by them, and by Messrs. Menzies & Gallagher, as the Champion, and sold as such; and more recently imported as the Champion and sold as the Beaconsfield. It combines the main characteristics of a market fruit. It is essentially a pioneer grape. It was in flavor the poorest, with one exception, of the thirty-three varieties exhibited. It is, however, quite good enough to sell. The market does not demand quality in a grape any more than it does in a pear or in an apple. The Champion has the earliness, size and color necessary for a commercial grape, and as such, and a forerunner of finer fruits, it must prove of great service to our northern country. As a commercial grape, however, it has a weak point in its shortness of season. The Champion drops from the bunch somewhat—less so we think than the Hartford; but our knowledge on this point is limited. It is short in its season, though nothing like as short as a Peach apple; but in a general way it is like the Peach and Astrachan apples, early and perishable, yet profitable. The money aspect of this Champion grape, the proprietors of the vineyard at Beaconsfield must surely have carefully weighed, and their firm belief in it they have proved by the fact that they have planted out seventeen acres, or 12,100 vines."

THE CODLIN MOTH. (*Carpocapsa pomonella*.)

BY WM. SAUNDERS, LONDON, ONT.

The Editor has kindly sent me some correspondence lately received containing enquiries relating to this insect, from which it appears that erroneous ideas have been circulated of late by the press in reference to the habits of the codlin moth. The statements made, although somewhat contradictory, are all claimed to come from reliable men, who do not however attach their names to the communications. It is asserted, in the first place, that the female codlin moth has no wings, but crawls up the apple trees to deposit its eggs on the fruit. Second, that it has wings, and is attracted by sweets, and that hundreds of them may be readily caught by hanging jars of sweetened water at night among the branches of the apple trees. A third statement is that the larvæ, when full grown, descend to the ground and enter the earth to change to chrysalids.

It is evident that the first conclusion as to the wingless character of the females has been arrived at by the writer confounding the canker worm moth or the tussock moth with the codlin moth. In both the former species the females are wingless, but the female codlin moth is furnished with ample wings, with which she flies as actively as her male companion.

With regard to the trapping of codlin moths by means of sweet liquids, I may say that it is contrary to the experience of all entomologists. Many years ago this remedy was recommended, and I then gave it what I considered a fair test. At the time when the codlin moths were plentiful and on the wing, I hung bottles of sugar and water, others with the same sweet liquid mixed with a little Jamaica rum, and another series mixed with other flavoring materials which were supposed to be particularly attractive to insects. Hundreds of moths were captured, but the most careful examination failed to reveal the presence of a single codlin moth among them. Other entomologists have tried this remedy with similar results.

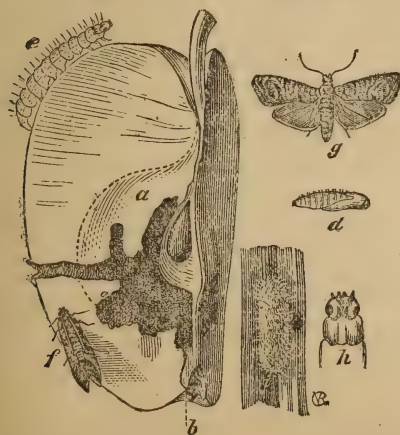
Entomologists everywhere are in the habit of trapping moths by alluring them to sweetened fluids by night. The liquor generally used is West India molasses mixed with ale, or diluted with water flavored with Jamaica rum. This is brushed on the smooth bark of trees, or on pieces of shingle tacked to them; or pieces of cloth or flannel are

saturated with the sweet liquid and fastened to the trunks of the trees. If this is done during the periods when insect life is most abundant, moths visit the baits by scores and sometimes hundreds, when by the use of a dark lantern and suitable collecting bottles, the most desirable specimens are secured. I have followed this practice myself for many years, and have thus caught thousands of moths, and have seen tens of thousands come to sip the attractive sweets, but never once saw a codlin moth among them. Many entomologists have pursued this method of collecting more enthusiastically than I have, and within the past eight or ten years some of them have published long lists of their captures, but no one to my knowledge has ever mentioned an instance where a codlin moth had been attracted by sugar. It would be well if the parties who have been so successful in this way would send specimens of their captures to some entomologist, who could determine them with certainty. In the absence of such evidence it is highly probable that some other small moths have been mistaken for codlin moths.

As to the statement of their going under ground to change to chrysalids, this is certainly erroneous, as it is contrary to universal experience. Hundreds and thousands of the worms are yearly caught hiding and changing to chrysalids under bands tied around the trunks and lower limbs of apple trees, which clearly proves that their habit is not to burrow under the earth when about to undergo this change.

In as few words as possible I will endeavor to give a sketch of the

life history of this insect, with the best known remedies for its destruction. In the accompanying figure the moth is represented at *f* with its wings closed, at *g* with its wings expanded; *e* shows the worm, *b* indicates the point where it usually enters the fruit, *d*, the chrysalis, while the elongated silky case attached to a small piece of bark is the cocoon, in which the chrysalis lies snugly encased.



Soon after the mature worm leaves the fruit in the autumn, or during the early winter in fruit

cellars, it seeks some sheltered nook in which to change to a chrysalis; if out of doors, under the loose bark of trees, or other convenient hiding place; if in the fruit cellar, it may often be found about the barrels or bins in which the fruit has been stored. Having selected a suitable spot, the larva spins a tough papery-looking cocoon firmly fastened to the place of attachment, and within this enclosure remains in the larval state until early in spring, when it changes to a brown chrysalis, which shortly produces the perfect moth.

The early brood of moths appear about the time of the opening of the apple blossoms, and the female deposits her eggs singly in the calyx or eye just as the young apple is forming. In about a week a tiny worm is hatched from the egg, which at once commences to burrow into the fruit, eating its way to the core. The occupied apple generally falls prematurely to the ground, excepting in the case of early fruit, which often approaches maturity before it falls. When the fruit drops, sometimes the worm is found in it, but more commonly it leaves the apple before this occurs, and crawls down the tree seeking a sheltered spot in which to change to a chrysalis. From these chrysalids the second brood of moths make their appearance during July, before the end of which month the eggs for the later brood of moths are usually deposited, the larvæ maturing, as already stated, late in the fall or early in the winter.

REMEDIES.—These consist of either picking the wormy apples from the trees, or gathering them up promptly as they fall to the ground and feeding them to pigs or sheep, or of entrapping the worms in bands or other contrivances. The bands used are of different materials—strips of old carpet, cloth, canvas, or cotton, or even strips of strong paper cut about six inches wide and wound around the tree and fastened with a string or tack. Within such enclosures the worms hide and transform, and by examining them once a week or ten days from the early part of June until the last of August, and once after the crop is secured, and destroying each time the larvæ and chrysalids found there, a very efficient check will be placed on their increase, and if generally practiced in any section of country, care being taken also to destroy the worms in the fallen fruit, the apple crop would shortly be wholly or comparatively free from attack. These remedies can be relied on, and may be adopted by every apple grower with comparatively little labor, and the saving of fruit will amply repay for his trouble.

IRRIGATION.

BY THOMAS BEALL, LINDSAY.

While looking over some of the Annual Reports of the Fruit Growers' Association lately, my attention was arrested by Mr. Bucke's paper on irrigation, in the Report for 1877. I had never read this paper before, and some of the statements therein surprised me not a little. The second paragraph commences thus: "The average rainfall of the last thirty-five years in Canada has been $28\frac{1}{2}$ inches per annum, and the principal part of this falls in the months of May, September and October. It will thus be seen that in the greater part of the hot growing season, when water is most required to assist vegetation, it is in a great measure wanting. This sentence contains three separate statements: first, that the average annual rain fall is $28\frac{1}{2}$ inches; second, that the *principal part* of this (the italics are mine) falls in May, September and October; and third, that during the growing season water is in a great measure wanting." By referring to the Meteorological Reports, giving the average annual rainfall for the past forty years, I find the first statement to be sufficiently correct, but the average rainfall for the months named in the second statement is 8.994 inches, or less than one-third of the annual rainfall, and for the three months referred to as "the hot growing season," June, July and August, when there is said to be but little rain, the average rainfall is 8.869 inches, or one-eighth of an inch less than during the period mentioned in the second statement, and described as the period of the principal part of the rainfall of the year.

A few lines further on the writer says: "The beneficial heat of June and July is quite thrown away, . . . because there is no water to moisten the ground." The past forty years the average rainfall for the two months mentioned was 5.98 inches, or .475 inches greater than any two consecutive months except August and September, and only .464 inches less than these. Arguments in favor of irrigation in Ontario based upon such premises can have but little weight.

On page 14 Mr. Bucke says: "One would scarcely think it necessary to show that irrigation is required in a dry, hot country with only 28 inches of rainfall, when England, with a comparative cool temperature and a rainfall of 40 inches, can double its grass crop by

an additional supply of water." Quite true, provided the statement is correct, but is it correct? From a hydrotopographical map of England, prepared by Mr. G. J. Symons, for the "Rivers Pollution Commission," I find that that portion of England having an average annual rainfall of less than 30 inches is about four-fifths of its entire extent, and embraces nearly all the agricultural area of England; and the portion marked as having *less* than 25 inches takes in nearly the whole of the eastern half. It is quite true, however, that some portions of the map show a much greater rainfall. Perhaps it might be difficult to find another spot of equal extent on mother earth's surface where the rainfall is so unequal, for while it is only from 22 to 25 inches throughout nearly all the agricultural eastern counties, it exceeds 40 inches in the west of Cornwall, and in Seathwaite, in Cumberland, 165 inches is recorded as the average yearly rainfall. But merely the small spots indicated as having a rainfall of 40 inches or over cannot be classed as agricultural districts.

If Mr. Bucke was desirous of showing the beneficial results of irrigation to agriculture in England, it would have been well for him to have named some farms where irrigation had been applied on a large scale, giving the cost of the same, so that some idea might be obtained as to its practicability in this country, for no one will deny that a more plentiful supply of water at certain times would greatly increase the crop.

I am quite aware that large sums of money have been expended in various places in England and Wales in attempts to utilize successfully the sewerage of large towns and cities on farms contiguous thereto, but I have yet to learn that many of these experiments have resulted in financial success, notwithstanding that the enormous expenses attending the delivery of the sewerage on to the farms is mainly defrayed by the great and wealthy corporations desirous of effectually disposing of the sewerage in an innocuous manner. Yet on these terms there seem to be much doubt as to its practical advantages to the farmer, for by a report lately adopted by the Mansion Home Committee and the Royal Agricultural Society, acting jointly, they say in effect that given an ordinary farm and a sewerage farm *at the same rent*, the sewerage farm will do no more than hold its own in a wet year like 1879, but in dry periods the sewerage farm has many advantages.

THE SNOW APPLE OR FAMEUSE.

R. S. Shepherd, Jr., of Montreal, writes to the *Country Gentleman* concerning this apple, as follows:—

"The Fameuse is by far the most popular apple grown in this Province. In proof of this assertion the report of the Montreal Horticultural Society for 1876 contains the information that *fourteen* out of *sixteen* large orchardists on the island of Montreal, give the Fameuse as the most profitable; and of the country orchardists, *thirteen* out of *fourteen* place it first on list for profit. Although the tree is not so hardy as Duchess of Oldenburgh, Alexander, &c., yet it has no rival for first place. It is our heaviest cropper, and seems to adapt itself to various soils.

"As a dessert fruit the Fameuse brings the highest price in this market, and within the last few years it has been profitably exported to England from this port. It is the favorite apple when parties desire to send presents of fruit to friends in England. Last fall I sold all my selected Fameuse apples at \$4 per barrel to a grocer, who had received orders for private exportations of this kind. This was a high price for last season's crop, and I presume the grocer got his profit on the transaction. I merely mention this fact as an example of the high esteem we have in Canada for this most delicious apple."

THE ROSE OF SHARON.

Not much like our ideal of the queen of flowers is this Rose of Sharon, or *Althea*. It is neither sweet-scented, graceful or particularly exquisite in color of flower, yet it asserts and proves its value very thoroughly in its own way. If not graceful, it is straight, sturdy and vigorous, demanding for itself a prominent position on the lawn, somewhat away from other shrubs, with which its pronounced individuality does not readily blend. The flowers, if somewhat coarse, are bright and cheerful, and very welcome in August, when the lawn is specially destitute of bloom. To me the most attractive althea flowers are the single ones. The purity of outline, simplicity and breadth of color of such altheas are very attractive, particularly in an entirely white variety, which is still quite rare. Altheas seldom receive intelligent pruning. One generally meets monstrosities in this genus, for the very good reason that pruning, as applied to altheas is seldom pruning, but merely trimming or clipping. Instead of removing only a few inches of young wood year by year, the pruning knife should boldly cut back into the old wood, within a foot to three feet of the ground, according to the size and age of the specimen operated on. This should be done systematically, in winter or early spring, and not in June, as in the case of early flowering shrubs, for the reason that altheas bear their flowers on the wood produced during the current year of blooming. The result of such management will simply be a bush well clothed with leaves and flowers from base to crown, instead of comparatively naked stems, with leaves and flowers chiefly on the summit.—S. PARSONS, JR., in *Country Gentleman*.

ACTION OF FROST ON PLANTS.

BY G. F. NEEDHAM, WASHINGTON.

At the January meeting of the D. C. Horticultural Society, Mr. Wm. Saunders, Superintendent of the Agricultural Grounds, had a paper (as per title) from which I give your readers some of its points:

"You cannot tell beforehand what plants or trees are hardy. The wood of the orange is in appearance as hard as the oak. Nor will trees, etc., brought from corresponding degrees of latitude grow equally as well in another country that has a similar temperature. Australian plants which will endure cold of 15° below zero in their native habitat are destroyed here when the thermometer reaches the freezing point. The arid climate of Australia thoroughly ripens the wood, which is thus rendered capable of enduring the severe cold.

"The temperature and physical condition of the soil have also an important controlling influence on the cold-resisting power of plants. Unless a proper degree of moisture is furnished by the roots the more succulent branches will become dry and shriveled under the influence of cold, dry currents of air, although the thermometer be above the freezing point; and when the temperature of the soil is low the activity of the roots is correspondingly decreased, and they are unable to replace the losses caused by evaporation from the external surfaces of the branches and stems of the plant.

"Seeing that the temperature of the soil in which plants are growing has so potent an influence on their cold-resisting powers, we realize the value of the application of leaves, strawy manures and similar materials over the roots of plants during winter.

"From what has been stated it is evident that so far as concerns soil and culture, the greatest safeguard against injury to plants from cold is that of having properly ripened or matured growths. How much of the disappointment in fruit culture is the result of immatured growths it would be difficult to determine. I have long considered this to be the cause of the disease known as "yellows" in the peach tree. This disease is most prevalent in localities where growth is prolonged until it is suddenly arrested by a killing frost; and I am not aware of its existence in climates where the tree becomes deciduous in the absence of frost. It is within the province of the cultivator to assist nature in the requisites for perfect maturation of growth. The

fruit grower will be careful to avoid setting his trees in wet soil, or in low, rich lands. He will also prudently abstain from the application of stimulating manures, which would have a tendency to encourage late growth in autumn; he will abstain from all cultural operations on the soil when growth should be checked rather than encouraged, and use every available means to secure an early cessation of wood growth.

"When a fundamental principle is once determined and fairly understood, operative details based upon this knowledge are readily deduced and applied. As an example, I may allude to the well known fact that many of our beautiful evergreen trees from the northwestern and California coasts, as also various Asiatic conifers, have a great tendency to commence a second active growth during the moist, genial weather, which frequently occurs here during the early fall months. This growth never ripens, and in consequence is destroyed by the first frost, greatly to the injury of the plant. The mammoth tree of California and the Japan cedar may be cited as typical trees of this class. These fall growths may be checked by pruning the roots of the trees during September, which will insure matured wood; the young branches will become solid and firm, instead of being unripe and filled with watery fluid, and are thus prepared to stand the winter.

"Then, again, as to protection and the best means of preserving plants from injury by freezing, we are guided by the knowledge of the action of the frost on vegetation. Evaporation of the sap being the result of exposure to currents of frosty air, our efforts at protection will be in a direction to antagonize this result. Practically, taking such plants as roses, grape vines and raspberries as examples, the best method is to lay them on the surface of the ground and cover them with an inch thickness of sand or soil, or indeed any material that will protect them from direct contact with the air and the rays of the sun.

"With regard to the general subject of protecting the plants, some persons contend that a fruit tree or plant to be valuable or fitted for general culture must be able to take care of itself. This should be looked upon as a lame excuse for indolence and neglect. It is the province of man to assist nature in producing such results as he finds most desirable for his purposes; and if he removes plants from their natural conditions and then abandons them, so to speak, he must expect to realize the usual consequences of neglect.

FRUIT GROWING AT TEMPLETON, PROVINCE OF QUEBEC.

BY HUGH H. McLATCHIE.

The Burnet vine did not thrive well with me, and on examination I found the roots were covered with the phylloxera; this is the first I have seen of the pest here. Some vines which were started from cuttings of the Burnet are doing well, but have not yet borne. The Janesville grape is of poor quality, but better I think than Champion. They ripen with me the first week in September.

I have examined the different kinds of apple trees by cutting the ends from the branches of last years growth. Those that are frost proof are green and fresh to the very ends, and the pith light colored. In this class, the Duchess stands at the head of the list, then the Montreal Peach, Irish Peach, Brunswicker and Tetofsky. The latter was injured in the spring of 1875 by the sun scalding the bark.

A second class, headed with the Alexander, followed by White Astrachan, Pewaukee, Fameuse, Red Astrachan, and Walbridge. In these the pith turns brown, and the wood turns white and soft, and the sap oozes out from wounds made by pruning or other cause and turns the bark black.

Out of a dozen or two varieties of winter apples tried, the English Russet makes the best attempt at wintering of all I have tried.

Among the crabs, the Transcendent, Red and Yellow Siberian, Montreal Beauty, Marengo, Chicago, Lady Elgin and Winter Gem are quite hardy. Elliott's Beauty, Dartmouth, Hislop, and the newer sorts, Lake Winter, Whitney's No. 20, Brier's Sweet, and Van Wyck's Sweet grow well, but have not the fresh, healthy look that the Siberians have. Some of these I have had but a short time and never seen fruited.

In closely observing the causes of failure and their prevention, perhaps the soil may be one of the greatest obstacles to fruit growing here. I have noticed that rich manuring and strong growth are sure failures, and that young seedlings left unpruned will stand well, but the same grafted and growing strong will freeze to the ground. After trees begin to bear they do not grow so rank and soft, but stand the cold better.

Windbreaks may be useful, but if close and dense enough to stop the circulation of air, they would be bad for late and early frosts;

and the sun, by starting the sap early, might be injurious. Perhaps a forest or a mountain at a distance would be the best protection. Evergreens planted singly or in groups all through the orchard might do good. Some years ago I saw in some paper a novel idea. Instead of belts around the orchard, the writer planted them in this way among his trees. He claimed that they stored up heat during the day, and drew heat from the soil. Now it may be possible to change or effect the climate greatly by the destruction of large forests, but how a few spruce trees would keep an orchard warm is not so plain; but the shade may have caused the results which he accounted to storage. Every one who has had house or garden plants frozen knows the effect of a hot sun on them. If two plants are equally frozen, and one of them be left in the sun, while the other is placed in the shade and well watered, the former will be found to be ruined, while the latter will be but little injured. A friend of mine planted half a dozen trees of the Fameuse, and they all failed but one. That tree was planted near the west end of the house, and partly shaded with trees; the sun's rays do not reach it till near noon. He has never pruned it, so that it is a mass of brush, but is beginning to bear. It is the only Fameuse that I have seen here that looked like living.

Another thing that has a good effect is summer pruning, and topping back all the young shoots late in summer, and if they sprout nip them off again, but this plan would only do for the amateur.

PEAR BLIGHT AND PLUM CURCULIO.

A correspondent of the *Country Gentleman* asks:—

“Is there a blight proof pear tree, and a plum that the curculio will not sting? I have a thrifty apricot tree that blossoms, but bears nothing.”

To which Mr. J. J. Thomas replies,

“There is no pear that is absolutely blight-proof, although a few varieties are nearly so and are rarely attacked by the disease. Of these, Duchess d'Angouleme stands at the head; then Winter Niels, Seckle, Clairgeau and Beurre d'Anjou. The new Kieffer's Hybrid is thought by some to be perfectly blight-proof, and it is doubtless nearly so; but we have seen it slightly affected. There is no plum proof against the curculio, but these insects are easily destroyed if the work is properly performed. The loss of your apricots is doubtless from the sting of this insect, which you may easily determine by examining for the small crescent marks in the young fruit when as large as peas. The jarring process will save them if vigorously applied, which very few persons have the industry to do.”

THE FRUIT CANNING BUSINESS.

Mr. J. J. Thomas, horticultural Editor of the *Country Gentleman*, says in that paper:—

“We visited the canning establishment of the Niagara Preserving Company, and obtained from F. Gebbie, one of the proprietors who gives constant and efficient attention to the work, the following figures showing the quantity of some of the fruits and vegetables canned the last and present season. About two million cans are required for one year's work. In 1879 30,000 cases (two dozen per case) of tomatoes were canned, 15,000 cases of green corn, 7,000 of beans, and 7,000 bushels of apples. The present season 2,500 cases of cherries have been canned, 2,800 of Blackberries, 130,000 quarts of strawberries, and 1,000 bushels of plums. The work requires 400 hands. Several machines were in operation for removing the corn from the cob at the rate of one a second, or a bushel in a minute and a half; and another machine enabled the attendants to fill 40 cans per minute. The company engages of farmers a large portion of their supplies, 350 acres of corn being raised this year and 160 acres of tomatoes. About 200 acres of tomatoes are required each year, yielding about ten tons per acre.

How many fruit canning establishments have we in Ontario that do a like business? And yet this is but one of the canning establishments of Niagara County situate at Lockport, N. Y.

PERPETUAL BLOOMING PELARGONIUMS.

Who has not wished that these lovely flowers, the Pelargoniums, could be had all the year round? If they could only be persuaded to bloom at all seasons, as do their sisters the scarlet Geraniums, what treasures they would be. They are gorgeous indeed while they last, but it is only for two or three months in the early spring, and then their beauty is gone for the year. It is therefore with great pleasure that we now chronicle the arrival of a variety of Pelargonium that blooms as freely and continuously as any scarlet Geranium.

Mr. John G. Heintz, Florist, of Terre Haute, Indiana, has introduced a new strain of Pelargoniums which bloom almost constantly the year round, and is especially fine during the winter and spring months. He says they are of easy culture, delighting in a dry atmosphere, which at once will make them one of the most suitable and charming window plants. As bedding plants, he claims, they are equal to anything in use for that purpose; if the plants are kept at rest during winter and bedded out after the frosts are gone, they will remain in constant bloom all summer, enduring without injury the hottest sun.

This Pelargonium originated with Mr. Fredrick Dorner, of Lafayette, Indiana, who obtained some Pelargonium seed from Ernest Benary of Erfurt. He noticed that one of the seedlings commenced to bloom about mid-winter, and continued to bloom for some ten months, during all which time it was never destitute of flowers. The plant grew vigorously and at one time he counted forty seven good sized trusses. It thrives remarkably well as a house plant, being very easily kept, and blooming without intermission for nine months in the year.

We regret that we are not able to give our readers a colored illustration of this Pelargonium, but such of them as are familiar with those known as the Spotted Pelargoniums will readily form some idea of its general appearance and beauty.

AUSTRALIAN COMMISSION.

BY P. E. BUCKE, OTTAWA.

It is understood a Commissioner is coming to Canada during the ensuing summer, for the purpose of enquiring into and procuring for that country any economic trees or plants found here suitable for cultivation, and worthy of a place in the field or garden of the antipodes. In turning up Pugh's almanac for 1880, page 53, it is found that they have already procured from the continent some of our native grapes. The writer of the article in question says, "It would be far better for us to turn our attention more to the cultivation of the fine varieties of the American species of vines which are not affected with blight, or only very slightly so, as the well known Isabella and others which have been introduced into the colony. The following are a few of the best kinds, and cannot be too highly recommended: Adirondac, black; Ascot, a good white grape; Carter, black; Clara, yellow; Catawba, red; Cassady, white; Clinton, black; Creveling, black; Cunningham, a good white grape; Delaware, red; Diana, red; Elizabeth, white; Scuppernong, Ontario, Norton's Virginia, Lindley, &c."

It will be noticed in the list quoted that almost all the varieties named were introduced previous to 1866, and many of them are entirely superseded in Canada by much finer varieties. In the whole list only one of Rogers' (Lindley No. 9) is mentioned. It is observable that one of Charles Arnold's grapes (Ontario) is amongst those specified.

Whoever is appointed to receive the Commissioner should see that he does not return without a full list of either plants or cuttings of our best standard varieties of this luscious fruit, which Australia is able to raise in such profusion, and with so little trouble. The semi-tropical climate of those colonies where the orange and lime, the mulberry, fig and peach, the shaddock and citron, the loquats, pineapple and banana make ones teeth water to read about, would develop quantities of such varieties as Burnet and many of the Rogers, and such grapes as Rickett's Lady Washington, as have never been dreamed of in this country.

It would be well too if some of Mr. Arnold's new varieties of strawberries could be tested in these far off regions, where, though separated by space, all fruit growers feel the kindred of brotherhood. Our climate is so much colder than that of our fellow colonists that the exchange of plants will all be on one side, but they may have some new serials or annuals that would be suitable to our hot summers, and would mature before autumn closes in. If the new conservatories were ready at the Model Farm, on receipt we might be able to see what kind of looking things in the shape of plants and flowers their wild perennials would turn out.

TWO DELICIOUS PEARS.

Fine samples of the Dr. Reeder pear, just brought in from our orchard, gives me an opportunity to taste one of the finest varieties known to cultivators. It is much to be regretted that the best fruits are usually the least known. Coarse kinds are introduced in great abundance, and are to be found everywhere, but how rarely do we see the really choice sorts. But this is easily explained. Almost invariably fine quality is secured at the expense of vigorous habit, and generally the high flavored fruits are such indifferent growers that nurserymen cannot propagate them to advantage, and usually the fruits are not sufficiently attractive in size and color to take well in the markets; hence the reason that they do not become disseminated. Dr. Reeder is no exception to the rule. It is a moderate, slender grower, either on the pear or quince, and to produce good trees it costs three times as much as it does of strong growing sorts. The fruit is only of medium size, but so juicy, melting, highly perfumed—in fact, so perfect in every respect—that no amateur should be without it. This season it ripened nearly two weeks earlier than usual. It is generally in perfection in November.

Another high flavored pear, meriting perhaps the first place on account of quality is Bonne du Puits Ansault, one of Mr. Leroy's introductions, which is destined to do him credit for all time to come. It too, is a

moderate grower, and to obtain good trees, either standard or dwarf, it must be double worked. But such a delicious fruit well repays any extra expense that may be required to secure it. Of medium size, with skin of a light russet color, and flesh white, juicy, vinous, rich—superior in my estimation to Sheldon or Seckel. It certainly possesses qualities which entitle it to be ranked among the best pears known. It ripens early in September. While neither of these varieties is suitable for extensive orchard culture, I strongly recommend them to cultivators who desire choice fruits for their own table.—W. C. BARRY, in *Country Gentleman*.

CORRESPONDENCE.

REPORT OF THE FRUIT TREES AND PLANTS RECEIVED.

Glass' Seedling plum was killed by mice last winter, but I have some splendid small trees budded from it. They appear very hardy; subsoil red clay. Diadem raspberry and No. 20 strawberry are dead. The Burnet grape gives good satisfaction so far. It had two bunches of grapes, well set in the cluster; fruit very good, no mildew, soil rocky. The Goodale pear holds its reputation as a fine grower, but it has one serious fault in bearing Beurre Clairgeau pears this year. It looks like a fraud; soil light, subsoil clay. The Ontario apple neither grows nor dies. The Saunders raspberry grows well, and takes root from the end of the cane as readily as Mammoth Cluster. I had forgotten the Grime's Golden Pippin. The tree was dead when I received it, but I had one bushel of first-class fruit from a graft I saved.

JONAS NEFF, *Port Colborne.*

NOTE.—Mr. Neff has forgotten that the Association being unable to get trees of the Goodale at that time sent the B. Clairgeau instead.

REPORT ON PLANTS RECEIVED.

I have been very neglectful in writing to you concerning the trees and plants received from the Fruit Growers' Association. I have been a member for a good many years, and have had very few losses. I have had three varieties of grapes, the Salem, Burnet and Othello. The Salem grape has done very well; it bears excellent fruit. The Burnet has not commenced bearing, but looks rather funny. The Othello is subject to mildew. Of pears I have had two varieties. Beurre Clairgeau has not done very well, but Clapp's Favorite is a healthy looking tree, but has not yet commenced bearing. The small fruits have done very well. Fruit of most every kind grows well in the County of Huron. Apples have been very abundant here the past few years. First-class apples for exportation have been selling at from 75 cts. to 90 cts. per barrel. An establishment for drying apples by evaporation is commenced in Seaforth, but the price paid is only 20 cts. per bushel for good fruit, so you will perceive that apple growing is not very remunerative in this locality.

ROBT. LANDBOROUGH, *Clinton.*

 SENASQUA GRAPE—BURNET GRAPE.

We would have taken the Senasqua grape selected for this year's distribution, but it is considered later than the Concord in ripening, and so very liable to crack and defective generally that the original proprietor of it, Mr. Underhill, now recommends it for amateur culture only. How is it that the Association has made choice of such an inferior grape, instead of selecting from the seedlings of W. H. Mills or W. H. Reid? Several of them have been highly praised for their many good qualities in our Annual Reports. I fear that the Burnet, sent out in 1878, will not prove a success, at least my experience of it has been very unfavorable. I have found it very liable to mildew both in leaf and fruit, and too late in ripening. I received it from the Association and planted it in the spring of 1878, when it made a fine growth. In 1870 it also grew well, but the leaves mildewed badly, though I applied sulphur, &c., in a careful manner. In 1880 it bore 12 or 15 medium sized bunches, and not compact. Berries medium size, oval and sweet, and of fair quality, but with large seeds and thick tough skin. I speak of two or three of the best bunches which escaped the mildew and ripened. The others were not ripe when the frost came, which destroyed all the remainder. My Isabella's were ripe before the Burnet. I consider the Burnet, even if it were to ripen early and come to its best, very inferior in quality to the Salem, Brighton or Worden. Excuse me for writing so plainly on the above matter, having been induced to do so from the fact that I would have had more success in procuring subscribers if I could have offered them a grape that I could have recommended.

F. K. GORDON.

 REPORT ON EUMELAN GRAPE, &c.

All the plants I ever got from the Association grew except a peach, and the only one that did not stand the climate was the Early Wilson blackberry. The Eumelan was very prolific until this year, when it blighted or rusted badly. Some of the other vines blighted some, but that brought no fruit to perfection. The vines that did best with me this year were the Concord and Delaware. The Isabella did not rust much, but the fruit did not ripen properly. The Salem is the strongest growing vine, and Martha the weakest. The Clapp's Favorite pear was best patronized by the young people, and Beurre d'Anjou about the handsomest late pear. Both are hardy with us, so are the Clairgeau, Easter Beurre and Oswego Beurre. We have found Grime's Golden Pippin hardy, healthy, compact growing and long keeping, but no more exempt from the codling moth than other apples.

DAVID NISBET, *Mandawmin*.

ENQUIRIES ABOUT WINE MAKING.—I made wine last fall from mixed grapes, including Rogers' No. 3, 4, 15, Salem, Delaware, and Hartford Prolific. The wine is good flavored, but is not as clear as I would like it. Can you tell me how to make it clearer?—JAMES HINCHLIFF, *Hamilton*.

The Canadian Horticulturist.

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[No. 7.

THE WISTARIA.

This is one of the beautiful twining shrubs which has been brought out of nature's wilds, and which, planted in our gardens and about our dwellings, has taken kindly to its new surroundings. It is found both in Asia and America, in temperate latitudes. The American species, *Wistaria frutescens*, is found in moist soils in the Virginias, Carolinas and Southern Illinois. The Asiatic is found in China and Japan, and is known as the *Wistaria Sinensis*. The American species blooms from July to September; the flowers are pea-shape, borne in terminal racemes, of a bluish-purple color, and pleasantly scented. The Asiatic was brought from China to England in 1816, and from England to America. It climbs very rapidly, and will soon cover a very large space. Mr. Fortune mentions a famous patriarch which he saw in Japan. The trunk measured seven feet in circumference at three feet from the ground, and the branches covered a trellis sixty by a hundred feet. Many thousands of its long racemes of purplish flowers were hanging in graceful profusion from its branches, giving to the plant a most brilliant appearance. One of the racemes which he measured was three feet and a half in length.

There is an old hemlock tree at "Cottage Place," Germantown, Philadelphia, Penn., eighty feet in height, which is covered with a couple of Chinese *Wistarias*, the stems of which are about two feet in circumference.

It grows well in some parts of Ontario, and doubtless will in all parts where the peach can be successfully cultivated. There is a fine specimen that adorns the verandah in front of the residence of one of the members of the Fruit Growers' Association in St. Catharines, Mr. James Taylor's, which is a most beautiful object when laden with bloom. How far to the northward its successful cultivation can be carried will only be ascertained by actual trial. We look with interest

to the planting that is now going on in the experimental grounds of the Ontario School of Agriculture at Guelph, expecting that in a few years the reports will very materially advance our knowledge of the hardiness of many useful and ornamental trees and shrubs.

There are several varieties of these Wistarias now in cultivation. Of the Chinese there is a white variety, differing in no material particular from the other except that the flowers are white instead of blue. Another variety was introduced from Japan in 1863, having perfectly double flowers, deeper in color than the single, and the racemes somewhat longer. There is also a white variety of the American species, and one that is supposed to be a hybrid between the American and Chinese species, called *Wistaria Magnifica*, and another known as *W. Brachybotris*, brought from Japan, which differ from the type mainly in the shade of color of the flowers.

We are indebted to Mr. James Vick, of Rochester, N. Y., for the opportunity of presenting our readers with the colored illustration of a raceme of this beautiful flower which adorns the present number. It is a very truthful representation, and does great credit to Mr. Vick's accuracy and taste.

SOWING FLOWER SEEDS OUTSIDE, AND BEDDING OUT.

BY N. ROBERTSON, GOVERNMENT GROUNDS, OTTAWA.

Sowing outside should never be done sooner than the middle of May, and not then unless the weather is warm and vegetation going on rapidly. If you sow when cold weather prevails many of your seeds will rot and perish. A very large proportion of the flower seeds sown outside are never seen, and the general cry here raised is "bad seeds." The principle of success in this is much the same as in the hot-bed, but with this difference: The seeds are thrown carelessly in the ground, and nature is expected to do the remaining portion of the work, but she will not unless you adhere to her rules. A large portion of flower seeds are so fine that unless care is taken in the sowing of them the attempt will be in vain. The general practice with amateurs is to scrape away a little of the surface and sow the seed, and draw the soil back and leave it there. Often the soil is rough and hard below, and it is almost the same as if the seeds were thrown on a road

and covered over. Even these seeds would germinate if continued moisture is afforded them, but the roots being unable to penetrate the hard bottom soon die. Then see that the soil is loose below and rich enough, but remember that a very rich soil is not advantageous to have a good show of flowers, often the reverse; it will give you plenty of foliage but few flowers. Draw a portion of the soil away where you intend sowing, regulating the depth according to the size of the seed. For small seeds use a sieve to get a little fine soil on which to sow the seed; sow and cover with the sieve. Many small seeds are lost through insufficient covering as well as being too deep. Large seeds, such as sweet pear, lupins, &c., do not require this care, as they will vegetate under most unfavorable circumstances provided moisture enough is retained.

After sowing the seed the soil should be kept moist. If the ground is dry it would be better to wait for a shower of rain, and then do not let the soil dry up until the seeds are well up over the ground. Shade the land or you will be unable to do it properly. Avoid watering if you can, (as this makes the surface hard and crusty and more susceptible to drying up), if a fair moisture can be retained without it, but without shade it is impossible to succeed during our bright sunshiny days, for if allowed to become dry at a certain stage your seed is lost forever. Shading may be done by a bit of board raised on one side so as not to press on the soil, but some open substance such as spruce branches is better, as with anything close you will have to remove it when rain falls.

Bedding in its proper sense is scarcely a subject fit for amateurs to try unless they have the convenience of a hothouse, as it requires several thousand plants to fill a small bed, costing more than most persons would care to expend. I saw an article in one of our Canadian newspapers sometime ago recommending amateurs to try and imitate one of the most intricate beds done by the most expert gardeners at the Crystal Palace, and then said by many who saw it to be not very satisfactory. This bed took some fourteen thousand plants to fill it, and a small bed will take several thousand to carry out a simple design. To the amateur beginner I will give a bed filled in with plants that will not cost more than one dollar for seed, and few beds will be more attractive, and it will be sure to elicit much admiration from those who see it. I would suggest a circular bed of ten feet diameter,

(beds without corners are easiest.) Divide this into quarters by running a line both ways across the centre. Fill each quarter alternately with red and white phlox drummondii, that is two of white and two of red, this with a border of Tagetes (yellow) will make a handsome bed, and the plants are of the easiest raised. In planting out save a few plants of each color, and when the plants in the bed begin to flower, if any appear of a different color from what they are intended, remove them carefully and replace them with some of the reserve. The best way in which to do this is to take out the wrong plants in the bed, and dig a hole to receive the new ones, disturbing the roots as little as possible, and showing no trace of the exchange. If you plant close you may be able to remove a few plants and spread the others over the space.

Another plan for a bed is to plant in what may be termed ribbon fashion. Plant around the bed in bands of not less than eighteen inches, and in the space between you may fill up with any colors that will form a good contrast. You may use a white as often as you like, having a dark between, or a red, having a light between. Put a border around the outside of some stiff, erect growing plant, such as dwarf blue ageratum, which you can always trim a little on the outer edge to keep it from falling over the walk or grass. It is well to have the lines or masses as large as possible, as when they are small and narrow they run together and lose effect. When the plants grow, peg them down, covering all the naked portions of the bed, and draw them into the form you want. Pegging down has another advantage, as it causes the plants to throw out laterals, and gives you a more solid mass of flowers, and should not be neglected.

A border that is straight gives a fine chance to show a ribbon, and may be done by the same plants in the same manner as described for ribbon bed. This kind of work can be carried out with other plants, but the phlox drummondii is the best of all annuals for this purpose, is easy to grow, gives flowers for nearly three months, is almost a solid mass of color, and rarely disappoints the grower. If anyone wants a plan for a more intricate bed, I shall be most happy to give it through the CANADIAN HORTICULTURIST.

NOTE.—We hope that our readers will avail themselves of Mr. Robertson's knowledge and experience in flower culture, and learn intelligently to beautify their homes with these cheerful gems of nature.

THE GRIMES' GOLDEN PIPPIN.

The Grimes' Golden is a western apple, and originated in Brooke Co., West Virginia. By whom the seed was sown it is not positively known, but believed to be a Mr. Crawford. This seedling was among the first apple trees produced by an American in the Ohio valley. As such, without taking into consideration the superior quality of fruit, it is worthy to become a matter of history. The many good qualities of both tree and fruit constitute it doubly so. This extraordinary apple has few equals in the catalogue of American fruit; it certainly has no superior. Taking into consideration the hardiness and long life of the tree, its habit of constant bearing, the superior quality of the fruit, together with the great length of time it is in season, the Grimes' Golden stands preeminent.

The original tree, now over ninety years old, is in the orchard of Dr. Joshua Gist, formerly owned by Thomas P. Grime, situate two miles east of the Ohio river. This orchard of seedling trees was set out by Edward Crawford about the year 1790, and by him sold to Thomas Grimes, Sr., in 1799, at which time this noted tree bore its first crop of apples. It is said it has not failed to produce fruit every year since that time. It is a choice apple for the southern market, where it is well known. As early as 1804 Mr. Grimes sold the apples from this tree to traders on the Ohio river, to be taken to New Orleans. In 1734, the year of the severe frosts from the 13th to the 18th of May, which destroyed the fruit throughout the entire region where this tree was growing, it produced a full half crop of apples. This circumstance gave additional notoriety to the tree and fruit, and scions were sought for grafting.

The writer of this, who obtained his first trees of the Grimes' Golden apple in 1838, visited the original tree June 24th, 1879, and found it in a very good state of preservation, with a fair crop of fruit evenly set over its branches. The tree is about thirty feet in height, and measures six feet around the trunk two feet from the ground. Its branches cover an area of 30 feet in diameter. Although not a very large tree, it has frequently produced between 50 and 100 bushels of fine marketable apples in a season. Soon after the original tree came into bearing the fruit was called the Grimes' apple, and sometime later on the Grimes' Pippin. After the late Samuel Wood, a noted nurseryman of Jefferson County, Ohio, commenced propagating it, he added the word golden, calling it Grimes' Golden Pippin. Although it is a legitimate member of the pippin family of apples, at the annual meeting of the Ohio Pomological Society, in 1866, the word pippin was dropped, since which it has been known as Grimes' Golden, and this name is now well established.

The tree is a strong, upright, spreading, open, rapid grower, very handsome in form, and needs little pruning; wood very hard and tough; bark dark greenish brown; foliage large, dark green and very abundant. The tree is an annual bearer, and sets its fruit evenly over the branches. The fruit is very smooth; size medium; form oblong oblate, sometimes a little angling at the crown; color light green, with numerous minute light dots when taken from the tree, but becoming a rich golden yellow when ripe;

basin abrupt, tolerably deep, round and smooth; calyx large and open; stem long and slender; cavity deep and regular; core small and closed; seeds numerous, plump and dark brown; flesh yellow, very fine grained, breaking and juicy; flavor slightly sub-acid, aromatic, rich and sprightly; use, dessert and culinary; season October to April; quality best.

—G. F. N., *Millersburg, Ohio, in Country Gentleman.*

PLANTING NUTS AS TREE SEED.

BY B. GOTT, ARKONA.

In the February number of the CANADIAN HORTICULTURIST are some questions relative to the management of nuts as tree seeds, their preparation, protection, times of planting, &c., by one Daniel B. Hoover, Almira, Ont. In attempting an answer to these enquiries I have thought that quite possibly it might be advisable to treat this very important and primary subject with some little show of thoroughness, and simply because to our certain knowledge there are many besides our Almira friend who are deeply interested in and asking substantially the same questions relative to forest tree seeds. The simple facts of the matter appear to be that there is conspicuously growing in our people a deep and widening interest in forest tree culture from year to year, and many are now asking questions relating to it that a few years in the past would have been thought insolent and vain. Well we are rather glad to see this spirit of enquiry coming to the surface, and not alone because it is the indication of a growing intelligence among the general mass of our people, but also because it is the direct precursor of growth and development in a course that beautifies and enriches the face of our prosperous and beloved country. When every man shall become concerned for his own home, and for its beautification and advantages, will shortly appear the time when our general landscape shall be attractive, and a joy and satisfaction to our people and to the stranger in our midst.

Nuts have for a long time in the past been deeply interesting to the boys of the people, those natural scavengers of our woods and fields, as well also as to the earnest and laborious collector of natural history specimens for curiosity and study. They are at the present time constantly used as food by many people, and also by thousands of smaller dependent animals of our forests and fields, which subsist only

on their carefully garnered store of well ripened nuts through our long and tedious winters. Some grow on exceedingly high and massive trees, and others on low and grovelling bushes, but on whatsoever they may be found growing they all instinctively and naturally seek the covert the soil affords them for protection and future usefulness.

The gathering of nuts for purposes of seed should be done as early as possible after their maturity, as the least possible amount of drying by the influences of the atmosphere is only injurious to them as germs of future plants. The nut gatherer must be a close and discerning observer of nature, as in the treatment and preservation of nuts some require treatment quite different from that of others. Some must be kept studiously dry and away from all outside moisture during winter, while others must as studiously have a liberal supply. Again, some must be kept cold, and exposed to frequent freezing and thawing to subdue their obstinate coverings, while others must as carefully be kept out of the reach of frost. And still again some may be advantageously planted in their seed beds in the fall of the year, while others will not endure this treatment with impunity.

But to particularize, it will perhaps be best for our purpose to make some special statements as briefly as possible relative to the management of each kind of nut for seed purposes.

English Walnuts, *alias* Maderia Nuts, (*Juglans Regia*.) Nuts ripe early in October. Dash from the trees, gather and place in thin layers on the ground, and slightly cover with damp earth to keep moist and secure from the atmosphere during the winter. In early spring take out and plant in a seed bed six inches by two feet, kept clean and protected from the severity of the sun. These nuts will not do as well in this country as our native variety, but in favorable spots the young trees will do tolerably well, although but very few are now found growing amongst us.

Black Walnuts, (*Juglans nigra*.) and Butternuts, (*Juglans cinerea*.) are native forest trees of fine proportions. Nuts ripe the latter part of October or first part of November. After they are matured and loosened by the frost or shaken down by the wind, they must be gathered as soon as possible and protected from the atmosphere, and planted early the following spring. Fall planting may also be adopted, but spring is greatly preferable, as thereby solidifying of the ground and encrustation is mostly prevented.

Hickory Nuts, (*Carya alba*, and *C. amara*), are treated much like the preceeding. The first is an exceedingly pleasant and nutritious food, and is greatly reished by both man and beast. The nuts are slow in germinating, and for a year or two make a slow and feeble growth, but with patience and care they eventually make fine trees.

Beach Nuts, (*Fagus sylvatica*), are produced on native forest trees of noble growth. The nuts ripen in great abundance early in October, and readily fall by the influences of frost and wind. On low spreading trees they are dashed and gathered on sheets and preserved in dry sand, out of the way of frost, and sown very early in the spring in well prepared seed beds in rows one foot apart. They readily germinate, and form fine trees in a comparatively short time.

Chestnuts, (*Castanea Americana*, and *C. pumila*), also Spanish Chestnuts, (*C. Vesca*), and the ornamental and beautiful lawn tree, the Buckeye or Horsechestnut, (*Æsculus hippocastanum*), are all the fruit of forest trees of deserved and growing popularity. The first three sorts are exceedingly relishable, and are much used for food. Nuts ripe in October or November, and will readily fall by the action of the wind after frost. May be gathered and kept in dry sand out of the way of frost. They readily germinate in the spring, and may be sown in rows one foot apart and six inches in the rows in a well prepared and liberally enriched bed. They may be transplanted in the nursery rows at one or two years of age, and need some protection, as they are a little tender while in their infancy.

Hazel Nuts, *alias* Filberts, (*Corylus Americana*, and *L. Avellana*), are very popular and much esteemed for food, especially the English variety. The nuts may be gathered and stored away in dry sand out of the reach of frost, and sown as early as possible in the spring. They will thus make fine plants to be taken up early the ensuing fall. They are not much grown in this country.

Almonds, (*Amygdalus pumila* and *A. comunis*), Peach, (*Persica vulgaris*), Nectarines, (*P. levis*), Apricots, (*Prunus Armeniaca*), and Plums, (*P. Americana*), are all related, both in nature and the treatment of their seed. The Cherry, (*Cerasus Vulgaris*), may also be included. In the successful management of their seeds, the one essential point is studiously to prevent them from becoming thoroughly dried while exposed to atmospheric action. As soon as cleansed from their outward covering they may at once be stored away in boxes of

damp sand, and put out of the way of frost. But they must be moved at the earliest possible moment in the spring, as they readily germinate upon the slightest approach of vernal influence. In the case of *Prunus Americana*, most experienced nurserymen gather them as soon as matured, and at once commit them to the seed bed in the sure and certain hope of an early germination.

I am afraid that I am surpassing my limits in this article, but though meagerly done, I hope I have sufficiently indicated the treatment of most of the prominent nuts or hard shelled tree seeds of use in this country for purposes of germination. The subject is very interesting, and might very profitably have been treated at much greater length and consummate thoroughness, but we hope the hints dropped will in some measure at least answer the enquiries of our inquisitive horticultural friend.

BLACK WALNUT.

"Twenty three years ago Horace Everett planted twenty three acres of waste land on his farm, near Council Bluffs, with black walnuts. The trees are now from sixteen to eighteen inches through, and have been sold for \$27,000. This gives him an income of \$50.00 per acre for the use of the land."

The above is taken from one of our exchanges. It goes far to corroborate the views expressed by Mr. Thos. Beall, of Lindsay, and others, on the value of this tree, and the profit to be derived from a judicious planting of it in sections where it will thrive. Many a piece of broken land might at a small outlay be made very profitable by planting it with black walnut, chestnut or poplar, which otherwise would never yield anything to the owner.

FRUIT IN A HURRY.

This is a fast and impatient age. People want quick returns for their labor, and are not willing to wait for their gains. The impression that it will take a life-time to get fruit from a new plantation deters many from setting out trees. It certainly requires time for an orchard to come into bearing, but there is quite a variety of fruits that may be depended on to yield a speedy harvest.

The quickest return is from strawberries, and they are so easy of cultivation that it is wonderful they are not more generally grown. Set out early in spring, and well cared for, they will produce a moderate crop the

first season. They will bear in six or seven weeks from the day of setting, and if transplanted with a ball of earth adhering to the roots, will fruit nearly as well as though they had not been moved. Care should be taken to select well-rooted runners of the previous year's growth. It never pays to move old strawberry plants. The second year's yield of a new strawberry patch will be found abundant if it has been kept clear of weeds. Wilson's Albany may be depended on to give a bushel of berries to the square rod, or two quarts per day for half a month, in any year while in full bearing.

Musk melons and water melons will yield their delicious products four months after planting. They can be grown in any of the older districts of Canada, but should be started in a hot-bed. This is necessary in order to get the fruit in hot weather, when it is most welcome. But a hot-bed may be very cheaply constructed, and will be found very useful for starting other plants. Lettuce, radishes, tomatoes, cabbages, &c., may be grown around the melon plants, and as these are consumed or transplanted, room will be made for the melons to spread themselves, until finally they are left in possession of the whole bed, from which the frame can easily be removed when hot weather is fairly established.

Gooseberries, currants, raspberries, and blackberries will all bear a little fruit the same season they are set out, if permitted to do so. But it is better to defer their fruiting until the second season, from which time they will begin to bear in good earnest. Gooseberries and currants will not yield largely the second season, because the bushes will be small, but raspberries and blackberries will produce a full crop the second year.

Dwarf apples and pears are especially valuable because they come quickly into bearing. For a permanent orchard standard trees are preferable, but those who want fruit in a hurry should plant the dwarfs. It is thought by many that their precocity in bearing makes them short-lived, but they are well worth cultivating for immediate results. A nurseryman in Western Ontario, wishing to read a lesson to a resident in his village who was too impatient of results to plant an orchard, offered to set a dwarf apple-tree in his garden on these conditions:—that he, the nurseryman, was to have charge of the tree the first summer, and receive in payment the sum of ten cents for every ripened apple it produced. It bore seven apples, bringing the nurseryman seventy cents, twice the usual price of a dwarf apple tree. In ordering dwarf trees with a view to quick-fruited, it is well to let the nurseryman select varieties, as some bear much earlier than others.

Grapes afford fruit soon, usually beginning to bear the second and third year from planting. There is now a long list of them that may be selected from for out-door culture, but they vary in the time of ripening, and while there are many localities in Canada where any and all of them may be depended on to ripen their fruit, there are others where only the earliest kinds will come to maturity.

A good supply of the fruits that have been enumerated will furnish a family with these wholesome luxuries in a comparatively short period from their entrance on new premises. But while due attention is given to these, by all means let an orchard be planted, that ample provision may be made for the wants of the future.

LINDENBANK, in *Montreal Witness*.

EXPERIENCE IN PEAR CULTURE.

BY W. MCKENZIE ROSS, CHATHAM.

We find that the pear was common in the earliest times of the Romans; it was common in Syria, Egypt, and Greece. Virgil mentions pears which he received from Canton; Pliny describes the varieties in cultivation in his time as being numerous, and mention is made by the Emperor Tiberius of most delicate and agreeable pears.

The pear is not a native of America, but was brought from other continents. We read of its growing wild in some parts of Europe, Asia and China. It was brought to great perfection by such men as Van Mons, Knight, and many others of the present day. But I am not asked for the history of the pear, but the result of my own experience with it. I shall therefore begin with the little Amire Joannette, which yielded in 1879, being planted eight years, standard, 2½ bushels, which were sold for 12½ cents per quart, or \$9.00. In 1880 my sale book gives it credit for 64 quarts, and sold for \$8.00, besides a few quarts for the use of the house. It ripens about July 15th. I keep the soil clean and rich around it.

The next in order is the Doyenne d'Ete, which ripens here about the 20th July, and sells freely for 12½ cents per quart. It grows well either as standard or dwarf, and is a most delicious little pear. The skin is clear yellow marked with small dots, and red next the sun; flesh white, melting, very sweet and juicy.

Beurre Giffard comes next, and is much larger than the former, with a greenish-yellow red next the sun. Flesh white and most delicious, and the fruit sells here for about 10c. per quart. The tree is a slender grower, but healthy, hardy and productive. It is ripe here about the last of July.

The Bartlett is a splendid pear. The tree grows upright, with straight yellow shoots. Skin smooth, yellow, with a blush on the sunny side; it is sweet, juicy, with a highly perfumed vinous flavor. It is ripe here from 25th August to 10th September, and sells for \$2.50 per bushel.

The Clapp's Favorite is my next,—a most gorgeous pale yellow pear, marbled and splashed with red and light brown. Flesh white, fine grained, juicy, melting, buttery, rich, with sweet perfume. I can see in imagination the lovely baskets of this beautiful fruit even now

before me. The tree is a rapid, straggling grower, with large shoots; it stands the frost and severe weather well; the bark is a yellowish-brown color, and is clean and healthy. Succeeds well as dwarf or standard. The fruit should be gathered some days before ripe; it will not keep long.

The Ontario Agricultural Commission after finishing their duties here paid me a visit, and expressed their delight while looking at this noble pear, as well as others that I may mention hereafter, and with my mode of cultivation. With the liberal aid given by the Ontario Government, the Fruit Growers' Association ought to play a conspicuous part in this great land of my adoption. British North America ere long will be one of the greatest countries under the sun, and one of the most valuable possessions of the British Empire. Canada is said to be the brightest gem in the British crown. Itself of richer value, it will be guarded with all the power, wisdom and love of a family heirloom. On these grounds, therefore, we can never cease to be affected with everything that affects the parent state.

I fear that I have trespassed on your valuable space, and perhaps allowed my mind to run into a strain foreign to the HORTICULTURIST, but being one of its first Directors I trust you will forgive me. It is this little monthly that is always welcome to my home, and has my best wishes for its future usefulness.

ON PEAR BLIGHT.

BY PROF. E. W. CLAYPOLE, YELLOWSPRINGS, OHIO.

In the number for April, 1881, appeared a useful and rational letter from "Rusticus" on pear blight. "Rusticus" records his experience, and then clearly and logically reasons from it to its cause. He does not jump to the conclusion that wood ashes are a specific remedy for this, the most deadly enemy of the pear and apple in many parts of the country, but suggests that the ashes may improve the condition of the tree, and so make it less susceptible of injury from the blight. The fire-blight is now believed to be a parasitic growth in the soft bark of the young twigs, which disorganizes the tissue and destroys the starch; at least this is the opinion of Prof. Burrill, who has made a special study of the subject. Now it is well known that though

such parasites often attack perfectly strong and healthy plants, yet their attacks are more common and more deadly on such as are weakly and out of condition. Hence the more rational mode of treating all such enemies is to tone and strengthen the system of the plant, so as to enable its sap to resist the decomposing action of the ferment. Now the potash which wood ashes contain is well adapted to do this. In fact the exhaustion of available potash in the soil is in my belief one cause of the failure of old orchards, if constantly cropped, to keep up to their former standard of yield; and here, by the way, lies one of the physiological objections to the constant cropping of orchards as practiced in Canada and the States. But I cannot enter now upon this point.

I should be very glad to hear further from Rusticus, or any other of your subscribers, in reference to this topic. I should like to hear of others who have tried ashes. After the winter rains and snows are over, the ground is too dry on the surface and the rains too occasional in most seasons to leach the ashes and carry the potash far enough into the ground to accomplish its purpose. Moreover, the fire-blight shows itself and does its mischief very early in the season. It is consequently too late now to expect much from Rusticus' remedy this year, but if any of your subscribers will go to the small trouble and expense of watering some of their best trees with saltpetre dissolved in water at the rate of one pound to a gallon, and put about three gallons to every tree, washing it in with as much more water as they think necessary, I should be glad to hear from them during the summer what effect if any they have observed.

PREPARATION OF NUTS FOR PLANTING.

BY THOMAS COATES, MILTON.

In the February number of the *HORTICULTURIST* you ask some of your correspondents to answer Mr. Hoover's question as to the best way in which to prepare nuts for planting. The answer is very simple,—they need no preparation. Take the Canadian walnut for instance. As soon as the nuts fall from the tree gather them up just as they are with the hulls on, and plant in a trench three or four inches deep, about four or five inches apart, and cover them up. If

the nuts are well matured they will come up as thick as blackberries. The Canadian walnut is a greedy feeder, and should not be planted within speaking distance of fruit trees. The popular fallacy that the moisture distilled from these leaves after dew or rain is poisonous to everything on which it may fall is an absurdity. Let anyone convince himself by taking up a walnut root an inch or more in diameter, when he will find it literally covered with fine fibrous roots like the hair in a horse's mane. That is the secret of the poison. It is an old saying, but probably a little exaggerated, that five or six walnut trees planted through an orchard will destroy it. They make beautiful shade trees, and are very easily raised.

THE BEN DAVIS APPLE.

The Ben Davis is the most profitable winter apple, the most saleable, and most profitable to the orchardist, and sells more readily to dealers and to the people, and when well grown brings a greater price after mid-winter than any apple grown west of Michigan; and that it is selling now this mid-winter as readily and for as good prices in all the large towns and cities in the west and south-west as the best Michigan and Northern New York apples! One could get certainly as good a price to day in St. Louis, and sell them more readily, for a thousand barrels of first-class Ben Davis as he could for the same amount of first-class Spys, Greenings or Baldwins. And what is very strange, people who appear to have a good share of common sense buy them year after year with satisfaction. This is no guess work; we have been in the market year after year, and seen it with our own eyes, and the market reports where apples are quoted by name will prove it. And all our large apple growers will give their evidence that we tell the truth. The apple is large and very handsome; the tree is very hardy, healthy, and productive, a beautiful grower in both nursery and orchard, and adapts itself to nearly all soils and locations. It is placed among the most profitable from southern Georgia to Maine; it is one of the easiest of apple trees to propagate. But for the man who knows what a *good* apple is, it is neither fit to eat nor cook. We have for many years past looked anxiously for an apple with all the good points of the Ben Davis, among the seedlings brought out from year to year, that had the qualities so sadly wanting in it, but as yet have failed to find it. The fruit show at the meeting of the State Horticultural Society, at Warsaw, last month, gave us some hopes that the day is not far distant when the Ben Davis would be superseded by some of the seedlings there shown. They all appeared to be very handsome and of extra quality for all the purposes that apples are used for. The Salome (not quite large enough) by E. C. Hatheway, of Ottawa, Ill.; the Illinois Beauty, by A. H. Gaston, of Lacon, Ill.; one shown by Mr. Worthen, of Warsaw, Ill.; the Wythe, of Warsaw, and

another seedling from the same town were all very fine apples—all natives of this State, and all attracting marked attention in good fruit regions among men thoroughly posted on apples for money. But time and trial can only tell their future. A score of years have been industriously spent in trying to supersede the Wilson strawberry and the Concord grape, and they rank no higher among good fruits than does the Ben Davis. Yet to-day they stand without a peer—for what? *making money*, and that is what we are all after.—*Prairie Farmer*.

CORRESPONDENCE.

LETTER FROM MANITOBA.

I have been nearly six years in Manitoba now, and am very much interested in all that pertains to fruit raising and forest tree culture, and any information I can give you on these two subjects, I would be most happy to afford you. So far, I have had very fair success with my small fruit (excepting gooseberries), but with apples I have not been so fortunate. The first ones I planted I obtained from Rochester, N. Y., and they died after I had had them three years—sun scalded. I planted out last spring six Wealthy, six Fameuse, six Northern Spy, and six Red Astrachan, besides a dozen of crabs, and half a dozen Early Richmond cherries, and I hope to have better luck with these. I have planted a willow grove to the west of my little orchard, a single line of willows on the south, and have a belt of bush on the north, so they are only unsheltered on the east. We have plenty of wild gooseberries, currants, strawberries, raspberries, plums, and a sort of high-bush cranberry, about the size of a Red Cherry currant; and I am going to try the effect of cultivation upon some of these. I planted out a number of raspberries from the bush, and the result was very encouraging, for some of the canes fairly broke down with the amount of fruit on them. We have plenty of wild grapes, and I am going to plant some tame ones. I have two Janesvilles heeled in, and will get some Champions and Moore's Early. Perhaps by cross-fertilizing with some of our native grapes, I may succeed in obtaining a variety perfectly hardy, and adapted to our somewhat peculiar climate. Late spring and early fall frosts are the worst obstacles that fruit raisers has to contend with here, but I believe that if our people went into tree-planting as they ought to do, that our extremes of climate would soon be modified. They could not succeed in raising apples, &c., on the prairies of Iowa, until they planted shelter, and I think when the people of Manitoba go and do likewise, that we will be able to raise many varieties of fruit that we have to import at present. We have one advantage that many parts of Ontario do not possess, viz: the soil does not "heave," and that is something for the Manitoba horticulturists. I have been trying, as far as my limited ability would allow me, to get our people to take more interest in beautifying their places, and adding to their comfort, by going in wholesale for tree planting.

—H. P. B., *Thornhill*.

MY EXPERIENCE IN FRUIT CULTURE, &c.

Some seven or eight years since I got 150 good pear trees, and all lived, I believe, but one, until about 4 years ago, when the blight took some of them. The trees were all true to name, which cannot be said of a great number of trees planted; nearly all of them have fruited; I have also about 350 plum trees planted out, besides a large number of apples. This part of the country is a good section for fruit, but we are troubled with the insect enemies as well as others, two most troublesome being the codlin moth in the apples, and the little turk in the plums. I don't consider the black knot of much consequence if it is watched and kept down, but too many let it alone, and I am afraid the act for its destruction is just like the thistle act has been, almost a dead letter. If I see any black knot on the stock or large branches I apply spirits of turpentine with a small brush, it kills it very soon, and does the trees no harm. I have proved this remedy time and again. If it appears on the small branches cut off and burn.

Mr. Hood, of Barrie, contributed a very good article on the Berberry in the April No. of the last Vol. of the HORTICULTURIST; but he seems not to have had much luck in raising it from seed. My intention some years since was to go on a farm, chiefly to cultivate fruit, and to grow some live fences, and knowing that Berberry would make a good hedge plant, I saved the seed in the fall and put it in a box mixed with earth, left it exposed to the frost; and in the spring, early, sowed it in rows, so that I could hoe it after it came up. My soil was a warm gravelly one. In the spring it came up by the hundreds, although I found some did not come up till near fall. It grew very fast, but out on the farm, which is rather a cold clay loam, it does not seem to make much growth, so I think it more adapted to a light soil. In my opinion it is a beautiful as well as a useful shrub, either grown in hedge or single.

I have been a subscriber for some years, and have all the Reports, which I value very much. I hail each number of the HORTICULTURIST with pleasure. When I get the last No. of each year, I pull off the covers cut out the name, date etc., and paste on the back, so that I have now three neat volumes. The colored plates also adds much more to the book. I think your subscribers have a big dollar's worth every year.

WALTER HICK, *Goderich.*

QUESTION DRAWER.

The codlin moth had been very severe in some localities, while others are only slightly affected. I believe my garden orchard was injured more than my neighbor's. Is it because well manured and worked well? Well underdrained? How would it do to work the ground in the frost season around the apple trees?

We have not been able to find that the larvæ of the codlin moth at any time enter the ground, and therefore can not see that the condition of the soil has anything to do with the presence of the codlin moth.

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STRAWBERRIES.

The experience of another season with some of the more recently introduced varieties will not be without interest to all cultivators of the strawberry, and may prove useful to those who contemplate planting, especially those who intend to plant for market. The season just closed has on the whole been favorable to this fruit, especially in those sections of the country that escaped late frosts. The month of June was cool, with frequent showers and much cloudy weather, so that the fruit ripened up gradually and swelled to its full size. Reports from the City of New York say that never has there been such an abundance of strawberries, that the business has been enormous, and the supply fully equal to the demand for consumption in that large city and for shipping to other places, some having been sent in refrigerators to the West Indies. It is thought by some that the time is near at hand when they will be sent in this way across the Atlantic. As a matter of course prices ruled low during the height of the season, and growers did not always get well paid for the labor of production.

It would seem that the Wilson yet maintains its position as the great market strawberry of this country. With all its imperfections, its dark color, acidity, and the like, it seems as yet to be the mainstay of all who grow for market; and so extensively has it been planted, that when the crop of Wilsons is being harvested the markets are literally deluged with its berries, and prices rule low. In Toronto they were retailing at seven cents per basket during part of the season, and were sold in the St. Catharines market as low as four cents. From this, one would infer that those who grow for market might profitably turn their attention to those varieties which ripen either before or after the Wilson, and so secure a better price by avoiding the period when the great rush of the Wilson comes in. Besides this, the public are fond of variety, and those who are able to gratify their taste will

pay a higher price, if needs be, for the sake of a change. So that if a berry can be found of a different appearance and flavor, even if ripening at the same time with the Wilson, which is sufficiently reliable, productive and popular, it may be more profitable to cultivate that variety to some extent, instead of relying exclusively on the Wilson. The thing to be ascertained is whether we have such a berry, and the object of these notes is to lay before the readers of the HORTICULTURIST such information as we now have of the several varieties claiming attention, so that they may be aided in the selection of those they desire to plant.

Prominent among the sorts of later introduction, we notice the

CRESCENT SEEDLING.

This variety was introduced by Mr. Parmelee, of New Haven, Conn., about ten years ago, and has during this time become widely disseminated. In so far as we have had an opportunity of observing it, we have found it to maintain its eastern reputation for hardiness, vigor of growth and great productiveness, and this seems also to be the general opinion of those Canadian cultivators who have given it a trial. It is certainly a most vigorous grower, having large, healthy foliage, which does not seem to spot or scald in the hottest weather, and it is also quite able to endure our winters as well as the Wilson. In point of productiveness it rivals the Wilson, being considered by many of our observing cultivators *as productive* as that well known variety. On account of its very vigorous habit, we are confident that it should be allowed abundance of room, in order to the production of the finest berries and largest crop. The berries are not of extraordinary size, but there are less small berries than of the Wilson, hence the crop is more uniform. The color is a bright scarlet, which is more attractive than the dark, dull red of the Wilson; in flavor it is not so tart, nor is it any richer, if as rich; the flesh is a light pink, and not quite as firm. These seem to be the points of this berry. The fact that the flesh is not as firm as that of the Wilson detracts considerably from its value as a shipping fruit, but for a near market its bright color and fair, uniform size, coupled with the vigor, hardiness and productiveness of the plant, give it considerable value. It should be stated that the flowers are pistillate, and therefore it should be planted near other varieties which produce an abundance of pollen.

CUMBERLAND TRIUMPH.

This variety has received considerable attention since its introduction in 1874, by A. Miller, Carlisle, Penn. The plant is vigorous and hardy, and fairly productive, but by no means equal in this respect to the Wilson. The berries are large and uniform, and of a bright, light red color, and of fair quality, but too soft for shipping any distance. In many respects it resembles the variety raised by J. H. Biggar, of Drummondville, and named by him the

NEW DOMINION.

This possesses all the good qualities of the Cumberland Triumph, and is at the same time more productive, of somewhat firmer flesh, and better flavor. It is a very showy, handsome fruit, of large size, very regularly formed, and very uniform, ripening towards the close of the Wilson crop; and though not of the highest flavor, sells well in a near market, where it can be offered fresh. But it also is too soft to bear long journeys by rail, and is in danger in such cases of arriving in a damaged condition.

MINER'S PROLIFIC,

(sometimes called Miner's Great Prolific,) originated with T. B. Miner, of Linden, New Jersey, in 1877. This variety proves to be much like the Wilson in color and size of fruit, and also in quality. It is scarcely so firm in flesh, and so far as present experience enables us to speak of it, we do not find in it any desirable quality that we have not already in the Wilson.

GLENDALE.

This variety was brought to notice by W. B. Stover, of Akron, Ohio, who found it growing in the Glendale cemetery in 1871. It has some good points for a market berry, and is deserving of careful trial. The plant is healthy and vigorous, and yields good crops, though not equal in productiveness to the Wilson or Crescent Seedling. The berries are not very large, but more uniform in size than those of the Wilson. The color is a light scarlet; the flavor good, but not best; the flesh is firm, and the calyx large, so that it bears carriage well, and the time of ripening is later than that of the Wilson. It will thus be seen that in color of fruit, firmness of flesh, and time of ripening, it possesses three good points for a profitable market berry.

SHARPLESS.

Much has been said about this berry, and its praises have been sounded forth far and near. It was raised by J. K. Sharpless, of Catawissa, Penn., in 1872. The plant is vigorous, and the leaves are large, and seem to be able to endure the heat well. The fruit is large, often very large, and showy, irregular in form, of a bright scarlet color; flesh tolerably firm, flavor good, and the time of ripening somewhat after the bulk of the Wilson has been gathered. It is impossible to speak positively of its productiveness, but it seems to yield best when grown in hills or very narrow rows. In a matted bed the yield is not large. The size, color, and time of ripening of this berry are strong points in its favor as a market fruit, and in a discriminating market, where large size and showy appearance will command increased price, it gives great promise of being a profitable berry.

EARLY CANADA.

The credit of originating and disseminating this strawberry is due to one of the members of the Fruit Growers' Association of Ontario, A. M. Smith, formerly of Drummondville, now of St. Catharines. The writer first saw it in his plantation at Drummondville in the summer of 1878, at a time when the bulk of the crop had been harvested, but enough of the fruit remained to enable one to judge of its quality and prominent features. The plant is hardy and healthy, much like the Wilson in appearance and habit of growth, and apparently equal to it in productiveness. The fruit in size, color, firmness of flesh, and form seems to be the counterpart of the Wilson. The flavor is also much like that of the Wilson, though not quite as acid. Its time of ripening is about a week earlier than that of the Wilson, growing side by side and of the same age. This variety has not yet been widely disseminated nor extensively planted, but we hear of a person near Jordan Station who planted an acre of it in the spring of 1880, and this year gathered four thousand five hundred quarts of berries from it, which sold at very satisfactory prices.

The profitable marketing of strawberries is a problem into which many elements of calculation necessarily enter. The character of the market where the bulk of the crop is to be sold is an important element. Can purchasers be found who are willing to pay a good price for extra fine fruit when the market is full of that of a medium

quality, is a question that presents itself prominently to the mind of one who is thinking of growing fruit for that market. In many places a strawberry is a strawberry, and fine quality and showy appearance will not command a higher price than the medium grade. But if the market is one where bright color, large size and pleasant flavor will command double the price of those of medium quality in these respects, then one may venture to plant a few varieties for the express purpose of meeting that demand. Having such a market in view, it would seem that Crescent Seedling, New Dominion and Sharpless might be planted with good prospect of receiving satisfactory returns, to be preceded by Early Canada and followed by Glendale.

SHEEP IN THE ORCHARD.

A correspondent of the *Vermont Journal* gives the following interesting experience in keeping sheep in an apple orchard :

My apple orchard covers thirty-two acres of ground, and in addition to making it a run for some thirty hogs, I have during the past two years kept from 150 to 200 sheep and lambs in it during the summer. Of course that amount of land, if it was in good seeding and free from trees, would not pasture so much stock, but in addition to the pasture, I feed enough grain and wheat bran to keep them in such condition that the lambs shall be large enough to wean in July, and the sheep sufficiently thrifty to accept the buck after weaning the lambs, and thus drop their next lambs for early winter feeding next winter.

This, I find, costs me less than to hire the same number pastured by the week, and being crowded they eat every spear of grass, every weed and green thing close down, and eat every fallen apple as soon as dropped; for the latter purpose I find sheep much better than hogs, for while the hogs sleep so soundly as not to hear an apple drop if only a few feet away, a sheep never sleeps, so that it is on hand for every apple as soon as it touches the ground.

I let them run here until time to gather winter fruit, and although they will eat a few apples and a few twigs from the ends of the lower limbs, as they bend down with their load of fruit, I find my fruit each year growing fairer, with less and less wormy apples, and my trees, manured with the feeding of so much grain, are looking remarkably healthy and are productive. To prevent their gnawing the smaller trees, I wash the trunks with a solution of soapsuds, whale oil soap and sheep manure, about once each month, and besides I give the sheep a constant and full supply of fresh water; this is very important, for in hot weather they get very thirsty and will eat the bark from larger trees even, unless they have plenty of water.

I like this manner of treating my orchard very much ; what it would cost me to hire the sheep pastured each week will buy at least 600 pounds of bran and 400 pounds of corn, making an aggregate each summer of over ten tons of the very best kind of fertilizer for the orchard. For the money I pay for feed I get my sheep kept in the finest condition, have the lambs growing finely all summer, and have the whole amount of feed bought (which is worth all it costs for the purpose) scattered about the orchard in the best possible manner. Thus, you see, I prove that it is perfectly practicable to "eat my cake and have it, too," or in other words, to get twice value received for the money invested, besides having codlin moth successfully trapped.

IRRIGATION.

BY P. E. BUCKE, OTTAWA.

It has given me a great deal of pleasure to find that my papers on irrigation, read before the winter meetings of the Fruit Growers' Association in 1877 and 1878, have at last met with some attention in the public press, and I have to thank my brother Director, Mr. Beal, of Lindsay, for bringing forward this subject, which I consider one of the greatest importance as regards the wealth and prosperity of Ontario.

Some knowledge of the subject of irrigation and the requirements of plants would convince the most sceptical that "in the greater part of the hot growing season water is in a great measure wanting, because there was not enough moisture to moisten the ground." Some very interesting experiments have been made at various times, which would tend to bear out this statement. One of these was conducted by J. B. Lawes, of Rothamstead, England, with the view of ascertaining the amount of water required for a crop of wheat, and it was shown "that for every pound of dry matter produced, 200 pounds of water was evaporated through the leaves, and for every pound of mineral water assimilated by the crop, 2000 pounds of water passed through the plants." Mr. Lawes therefore came to the conclusion that the natural supply of rain water was totally inadequate for a maximum crop, and that leguminous plants, such as beans and clover, require a much larger supply of water. If such is the case in the humid climate of England, how much more so must it be under the bright sky and dry atmosphere of Canada. Under Mr. Lawes experiment the plants were given all the water they required, and the manures used were the

most active that could be produced, being a mixture of phosphate of ammonia, nitrate of potash, and chloride of sodium.

From similar experiments made at the Agricultural Observatory at Montsouris, France, results of a like nature were found to follow ; and it was demonstrated that for a crop of forty bushels per acre of wheat, the minimum amount of water evaporated through the leaves was six inches in depth over the whole surface of the field, whilst the maximum reached was seventeen inches of rainfall. Though 40 bushels of wheat is considered a good crop in this country, from 64 to 66 bushels are not uncommon with the farmers in England. If however only six inches of water is evaporated through the leaves, when we take into consideration the amount evaporated from the ground, the quantity of water that runs away during the heavier rains, and that which is lost unassimilated through the drains, it will be evident the rainfall of say half April, May, June, July and August,—the growing season,—amounting to $13\frac{1}{4}$ inches, (the average rainfall in Canada,) is “not enough to moisten the ground,” and that “water is in a great measure wanting.”

It is utterly impossible in Ontario to rival the crops of England without a larger supply of water than the clouds are willing to give, and if such is the case with wheat how much more is it with regard to the grasses and the more succulent garden vegetables. Every year we see the pastures more or less burned up, and even the foliage plants, with the exception perhaps of Indian corn and millet, would give a much larger yield if water were at hand for irrigation.

It is hardly a fair comparison to set the climate of Ontario and England in juxtaposition with regard to irrigation, as there is relatively no similarity. The evaporation from the sea keeps the atmosphere there continually moist. We hear of such things as eight hours sunshine in eighty days, I think in the year 1877, but of course in the year referred to the crops were unusually bad, whereas the average of cloudy weather here is only 0.61.

I am aware that sewage farms have not so far met with the success anticipated. It appears that the thicker parts of the manure collect around the stems of the grass plants, and the growth is checked or decay ensues. But water meadows have always proved a success.

The vineyards of the Crimea which are planted in four villages, and extend over an area of 15,000 acres, are regularly irrigated,

commencing from the time when the vintage has been completed in the autumn, the watering is continued until the fruit sets next spring.

Mr. Beal thinks that sufficient information was not given in the papers referred to on irrigation read at the winter meetings of 1877-8—see Annual Reports for those years. I can only say that the time of these meetings is limited, and the subject of irrigation is a long one. To have travelled over all the ground (or water) would have wearied the audience. My object was merely to draw attention to the subject generally, trusting that parties more conversant than myself, and more able writers, would give their experience.

A general system of irrigation, such as is required for Ontario, would have to be undertaken either by the Government, as in Europe and Asia, or by companies, as in California. It would not be possible for private individuals to undertake the artificial watering of more than a few acres. Irrigation on a large scale would require legislative enactment for the right of way of large canals, heavy cuttings and embankments, and the use of water from streams at present flowing. It would therefore have been useless to give any estimate of the cost of the systems employed by private individuals in England. There also the cost of labor and material is cheaper than here, and a smaller supply of water is needed.

In the south of France, where the climate is hot and dry, and irrigation is extensively practiced, from $3\frac{1}{2}$ to 4 inches of water in depth is applied to the land every ten days; and this supply is the basis for all contracts between the government, which looks after the water supply, and the owners of the canals. And this may be taken as the medium amount required in Canada, as the climate and circumstances are somewhat similar. Some crops and soils require more, and some less.

From observations made by Mr. Dickinson, Abbots Hill, England, extending over eight years, he found that ninety per cent. of the water which falls during the summer months was evaporated from the soil. If such is the case in a cool, cloudy climate, what must it be here, where the temperature is from 15° to 20° warmer, under the direct influence of vertical and unveiled sun.

The Early Purple cherry proved to be a very profitable crop this season, selling readily in Montreal at from 15c. to 20c. per quart.

HORTICULTURAL GOSSIP.—XIII.

BY L. WOOLVERTON, GRIMSBY.

THE FOREST TENT CATERPILLAR, (*Clisiocampa sylvatica*), is more numerous this year about Grimsby than ever I have seen it. I had just read the other day of the great devastation committed by the army worms in northern New York State, when I found our orchards swarming with these caterpillars. Leaves were loaded with them here and there on each tree, and great broods on the branches.

They differ from the American Tent Caterpillar, (*C. Americana*), in that they do not congregate under webs, and in having a series of white stripes along the back instead of a continuous white line. Another distinguishing feature is the color, which is of a paler hue. Generally they are not friendly with the last named, seldom being numerous in the same orchard. How true it is that the fruit grower to be successful must exercise the most restless vigilance. These enemies will very speedily strip an orchard bare of foliage if left unchecked. I found I must deal carefully with them, for they are more wary than their American cousins, which hide under their webs and calmly submit to death. They will drop to the ground if disturbed and escape unless you are prepared for their manoeuvres. Where I found them congregated on a limb I gathered them on a flat trowel-shaped board and there destroyed them, and where they were huddled on a leaf high up, I cut the twig down with a long Waters' pruner and stamped out their hateful lives.

THE FALLING OF PEACH LEAVES is a more perplexing trouble to peach growers just now than any insect foe, for we know no way of meeting it except with resignation. What does it mean? The leaves throughout the orchards are wilting and falling—we know not why. Some trees look as if they were just transplanted, and were dying for want of moisture. A little while ago the trees were full of blossoms, and peach growers were beginning to solace themselves with the expectation of a good crop and long prices. But, lo! in a night our hopes are vanished. Is it a premonition of a wide spread destruction of peach orchards by the yellows, or is it some new disease? We are yet at a loss to say.

THE YELLOWS.—A meeting of the Fruit Growers' Association of Grimsby was held the other day in the Town Hall, Grimsby, for the

purpose of taking steps to give effect to the law just enacted for the prevention of the spread of the yellows in the peach. This law provides that any five freeholders in any municipality may petition the council of such municipality, or of any adjoining municipality, for the appointment of an inspector. The duty of this officer shall be to examine all orchards wherein yellows are supposed to exist, and to give notice to owners to cut down and burn diseased trees. The owners are then compelled to destroy such trees within seven days after such notice has been served. This meeting took the initiative in this matter, by appointing a committee of five in each municipality of the peach growing district, who should be urged by the Secretary to take immediate steps in their respective localities for the enforcing of this Act.

THE DOYENNE D'ETE PEAR.

BY J. M. MCAINSH, MISSOURI.

The Doyenne d'Ete is the most profitable variety of pear I grow. The fact of its being so, however, is not so much due to any merits it may possess as to exceptional circumstances. It is the earliest good pear we have, ripening about the first of August, a time when in this section of the country fine fruit is rather scarce, strawberries, cherries and other early fruits having about gone by, and fall pears, plums, &c., not yet being in the market. The tree is a fair grower, and although it cannot be classed among the very hardy sorts, still it can be grown successfully throughout a large part of Ontario. It bears abundantly when quite young, either as a standard or dwarf, but except when a small tree is wanted for the garden I see no inducement to grow it as the latter. A larger quantity of fruit can be grown with less expense on standards. The fruit is of small size, but as a dessert pear it ranks first quality. When ripe it is of a bright yellow color, and the best specimens are usually shaded with red. Those who are growing pears for family use should plant a tree of this variety—probably one will be sufficient. So long as it is grown in small quantities as a market variety, it will probably prove profitable, but if it be grown extensively the market will soon be glutted, for it is too small to be profitably used for any purpose save as a dessert fruit.

WINDOW GARDENING.

The question is often asked: How often should I water my plants? Although a seemingly simple question, it is under all conditions, a difficult one to answer, as some plants, even of the same kind, require different supplies under different conditions. Take geraniums, for instance. When growing with full vigor, with the pots well filled with roots, there is but little danger of giving too much. Every day will not be too often if the weather is clear. Take the same plant with but a small number of leaves on it, and newly shifted into fresh soil, with but few roots, and watering once a week may even be too often for it. All soft wooded plants growing vigorously require an abundance of water; always when they are the least dry, which can be told by the surface of the soil getting white, or when, the side of the pot being tapped with the finger, a hollow sound is made. By feeling the weight of the plants, a little practice will suffice for knowing pretty nearly the condition of them, whether wet or dry.

Plants sparsely supplied with foliage and with few roots, require sufficient water to keep them in a healthy condition; but care must be taken not to approach anything like a saturation of the soil. Succulent plants, such as agaves and cactuses, require but little water. When at rest, their succulent leaves serve for storing up water sufficient to keep them in healthy condition for a long period. Deciduous plants—such as fuchsia and crape myrtle—during the time they are without leaves should not, however, be allowed to get too dry. As the stem and branches evaporate moisture, sufficient water has to be given at the roots to supply this evaporation; for, if not, the roots will eventually shrivel up and die.

The temperature of the water supplied to plants should be about the same degree as the temperature of the room in which the plants are growing; or, if a little higher, will be a benefit, rather than anything else. And when water is given, sufficient should be applied to thoroughly saturate the soil. A mere dribble on the surface does more harm than good, as it draws up what moisture there may be in the soil below where it is wet. Plants should not be allowed to stand in saucers filled with water. Give sufficient water to run through into the saucer. But then empty it out and do not allow the plant to remain in it. During cold weather watering is better to be done in the morning, as then all superfluous moisture gets a chance to evaporate before night.

The temperature at which plants should be kept during the winter is lower than a good many would suppose. High night temperature to both green house and window is injurious, the results of which, are weak and slender growths, with but few flowers being produced. A temperature of 45 degrees during the night with 60 to 65 degrees during the day time is high enough for most plants. Of course there are plants which require a good deal higher temperature than this but they are not so well suited for window culture. The main aim should be a steady temperature more than a high one. A high temperature to-day and a low one to-morrow, has a very injurious effect upon all kinds of plants, and should be avoided as much as possible. Pans for evaporating moisture should be kept on the

stoves during severe weather, when plants are growing. It not only helps to prevent gas from having an injurious effect, but modifies the temperature to a great extent. The most effectual way of fertilizing plants in pots is by applying it in a liquid form. Caution is necessary, however, not to apply it too strong. Weak and often is the best method and has the most beneficial results.

On the afternoon of warm days it is a great benefit to growing plants to have their foliage sprinkled. It helps to wash off the dust and keeps the plants in a healthier condition. Cleanliness with plants is a great source of success. An occasional sponging of the leaves frees them of insects and gives them a chance to breathe more freely than when coated over with dust. Fresh air must be supplied to plants, as well as animals to insure good health. On all good days give enough to change the atmosphere of the room. It is best given at the top of the window, as a circulation is then made without causing a draught, which, under all conditions, avoid. Rather then have a cold draught rushing through the plants, keep the window closed, and there will be sufficient air admitted through the laps to benefit them.

A tablespoonful of ammonia in two quarts of water is strong enough for the most vigorous plants and has a wonderful effect upon most all kinds of plants. Guano is an excellent fertilizer, but has to be used with caution, as a little too much may destroy the roots of the plants to which it has been applied, and may lead people to look for the wilted condition of the plant to some other cause, and apply remedies which will prove more destructive than beneficial. Just sufficient to slightly color the water is strong enough to use guano in a liquid form for plants. Soot makes excellent manure for plants in pots, if judiciously applied. It gives a bright green tint to the foliage and deeper colorings to the flowers. On some kinds of plants—such as hydrangeas—it changes the color of the flowers altogether. It is difficult to mix soot with water, if put into it loose; but when tied up in a cloth, and then soaked in the water, it can be pressed out and made as strong as wanted. Only very small quantities should be used. If applied strong it destroys the roots of the plants, like guano. Pigeon and hen manure make good fertilizers for plants; if coal be mixed with it, the smell is mostly destroyed; but caution has to be observed in its use, as it is like guano, very strong, and injurious to plant-life when used too strong.

All plants grown in greenhouses and windows are liable to insects of some kind. Some kinds of plants are more subject to the attacks of insects than others, and some kinds of insects are more easily destroyed than others. The best preventive of insects of all kinds is thoroughly syringing the plants that endure it without injuring the foliage. Some kinds of plants, such as the fine-leaved begonias and Chinese primroses, which are both very impatient with water overhead, are not liable to the attack of any kinds of insects. A dry, warm atmosphere is just the condition for insects being produced in large numbers, and is a condition unsuitable for plants thriving in. It is generally unhealthy plants that

are first attacked by insects. Plants in a vigorous healthy condition repel them to a great extent.

Green fly is the greatest pest in the way of insects we have. It increases so fast that in a short time after the first of them appear they are to be found in large numbers. Fumigating with tobacco is the most effectual remedy for the destruction of this pest; in fact, in our green-houses, is the only remedy. As soon as they appear, place the plants under a barrel and place some burning tobacco stems beside them. As soon as the barrel gets filled with smoke, lift out the burning coals, to prevent too much heat, as it is heat, and not smoke which destroys the leaves of tender plants. Heliotropes, salvias, and similar plants are easily hurt with the smoke. Caution is, therefore, necessary, if any of them get covered with fly, that smoking be done gently. On the morning after fumigating, give the plants a good syringing, to clean off the insects. The foliage of plants to be fumigated should be dry, as they are easily injured when wet.

Red spider is the worst insect in number which gives us trouble, and is produced where the atmosphere is too dry and warm. In an atmosphere where plants are growing vigorously, this insect is never seen. To get rid of it, frequent syringing is needed. It appears generally on the under side of the leaves; is a small red insect and is not often known to be on the plant until the foliage begins to get discolored by its ravages. Rose leaves, when attacked by it, get brown on the under side and finally drop off. The thrip is an active little fellow, generally doing his depredations on the under side of the leaves. It is a long and slender creature, with very narrow wings, and proves very destructive when it once gets a foothold. Fumigating with tobacco and washing the leaves are the best remedies for its destruction.

Scale or coccus is a common pest on a good many plants, especially hard-wooded kinds, like oranges, oleanders, camellias and many others. It is to the superficial observer, stationary, but spreads rapidly, there being a great many kinds of them—white, brown and black. The white is the one which gives the most annoyance, being the most difficult to wash off, which is the only remedy for getting all the kinds destroyed. Use in the water, when washing them off, plenty of soap and tobacco juice. Mealy bug is a loathsome looking creature, something like the above, but has a mealy covering looking like down. Washing and brushing with a soft brush is the best way of getting rid of them.

Plants which are regularly washed and syringed are never much infested with insects of any kind and if any of the kinds mentioned above first make their appearance destroy them by this means before a foothold by them is secured, and there is but little trouble in keeping them from doing much injury.

Worms in pots often give considerable annoyance to plant growers but a little lime put into the water will expel them. Soot answers the same purpose.—*Ohio Farmer.*

CORRESPONDENCE.

SEEDLING PEACH.

You ask, concerning those peaches I sent by mail, "Is the tree more hardy than other sorts?" I think it is; it never has winter-killed, except winter before last the tips of the limbs in some places were hurt, but the cause was unusually late and heavy growth. The limbs grew three feet and more, and that winter the thermometer went down to 25 degrees below zero here. The tree stands in front of my back kitchen, facing the south, consequently it blossoms earlier than it otherwise would; and last spring it was in full bloom when we had a heavy white frost covering the grass, but it come out all right so you can judge of its hardiness.

—MANNING BROWN, *Collingwood*.

MEETING OF THE AMERICAN POMOLOGICAL SOCIETY.

Thanks for the *HORTICULTURIST*, which I always peruse with pleasure. This writing is to state that I intend to bring the American Pomological Society to Boston next September, and I desire that this appointment may not conflict with the days of other societies.—M. P. WILDER, *Boston*.

ENSILAGE.

This subject is attracting considerable attention among leading agriculturists in the United States, and many are very enthusiastic over the advantages which this system of curing green fodder is thought to possess over the usual method of preserving it by drying. In order to preserve fodder by this process it is necessary to construct what is termed a "silo," which is a pit or vat, whose sides and bottom are made water tight, with the top open. The sides or walls must be perpendicular, so that there shall be nothing to prevent the settling or compressing of the fodder which is put in. It is built near the barn, sometimes in the basement of the barn, for convenience of feeding. The forage, which may be clover or grass, corn sown thick or millet, Hungarian grass or rye, is cut and immediately run through a fodder-cutter, which cuts it into half inch lengths or less, and this is thrown into the silo and carefully distributed and tramped so as to pack it close, particularly at the sides and corners. When the silo is filled, the fodder is covered with about six inches of straw, and over this is laid planks, so cut as to fit the silo. Upon the planks weights are placed, stone, iron, boxes filled with sand or earth,—in short, anything that will cause a constant pressure upon the contents of the silo, following it down as it settles.

It is claimed by many who have tried this method of preserving fodder that it is cheaper in the long run than the old method of drying or making into hay, that the nutritious qualities are better preserved, and that consequently cattle thrive better when fed upon it, and that it more nearly resembles green fodder, so that cattle eat it more easily than they do the dry. Mr. Henry R. Stevens, of Dover, Mass., has been testing this method, and so well satisfied is he of its great superiority, that he has given his experience in the form of a little treatise on the subject, in which he gives not only his own experience, but also that of some twenty others, with ample directions based upon his experience. At page 49 he gives Professor McBride's opinion of the advantages of feeding ensilage over the same fodder in a natural or green state, who had experimented at the University Farm in Tennessee with about seventy tons, who reports that it was eaten greedily by all kinds of stock, and he concludes that it is fifty per cent. cheaper than hay. This little treatise costs only fifty cents, and to it we refer our readers for full details, believing that the subject is worthy of attention especially by those farmers who are raising stock or engaged in dairying.

TREE PLANTING AND PUBLIC MORALS.

The real text of my subject is a little different from my caption, and reads "our growing horticulture and its effects upon public morals." Perhaps, at first sight you and many of your numerous readers may be considerably puzzled to see the connection, and ask, Where is the relationship between tree planting and public morals? But upon a closer inspection, and a more intimate acquaintance we think that an obvious relationship does exist between the two seemingly incoherences. It is sometimes so as you know, in other matters of great importance to the general weal; the relationship between sobriety and success in life, for instance, is not very clearly discernible by some of our fast young men, who are breaking through all friendly restraints and living questionable and fast lives, thinking readily to attain ultimate success and outstrip their sober, but slower companion, who will most certainly come off victorious in the end. "Our growing horticulture" is a text of importance to the best interests of the country. I see among the items of your Forest cotem. that the delivery of fruit and ornamental trees at this station, this season, has been enormous, and he estimates the trade in his vicinity alone at \$2,000 annually. This, for such a locality, is a vast sum to contribute to the planting every year, and it may be taken as an idea of our growing horticulture generally. This growing condition of our horticulture, is not alone indicated by the amount of trees bought and planted by our people, but also by the

beautiful locations of rich and valuable soil bought, laid out and prepared for horticultural purposes, by the flowers and flowering plants and shrubs bought and tended solely for purpose of decoration and ornamentation. Only just quietly compare for a moment this state of things of the present time, with those of a few years ago and the term "growing," we think, but faintly express the contrast, and but faintly indicates the strides of our modern horticulture. Now Sir, what do you honestly think will be the legitimate effects of this wonderful horticultural progress upon our people? Where will these effects be most readily and distinctly read and deciphered? In proportion, as the private or individual morals of people are affected for good or ill, such is also the effect upon their public morals; for in morals as in the concentrated forces of the ocean, the whole is made up of its individual parts. The family that is carefully, and industriously educating itself in each of its members, in the ennobling pursuits of horticulture, have little or no time for the corrupting influences of the street corners or the vulgar gatherings of vile centres. The youth, be they male or female, who are tending a garden under good direction and advice, have few hours and fewer quarters to spend in scenes of gambling and the corrupting associations of our public inns. Only drive through a section of our country, and take particular notice of the elevated condition of their horticulture, their extensive orchards of fruit trees, their live and beautiful hedge rows, their beautiful thriving streets, and their extensive well kept home gardens, judiciously tended, and filled with nourishing and health-giving vegetables and fruits, and above all considered in point of morals, their rich and splendid collection of living flowers tended by soft and delicate hands, the whole is a voluminous index of their public morals, and of their social life. Among such a people the devastations of degradation is not so much as known, and the withering, blasting influences of vice are never felt, because these have plenty better else to do. Our most sincere and earnest hopes are that these being influences for good, these cords of our national home life may be greatly extended, until our whole country in all its parts shall be under their protecting, refining, and elevating power. Now sir, as I hear you have the Temperance Act of 1878 in force in your county at present, prohibiting the public sale of useless intoxicants, is it not think you very desirable and even probable that much of the valuable time and money worse than wasted on these enervating commodities should be directed in the peaceful paths of horticulture. People will have more time, more money, and we are sure more ability to attend to these better things, and the fruits will be to them ennobling, enriching, and life giving. Let us earnestly work and hope for better days for horticulture in our fair land.—B. GOTT, in *Advocate-Adviser*.

CULTIVATING YOUNG ORCHARDS.—If you have money to fool away, seed down your young orchard to clover or timothy, or sow a crop of wheat or oats. If you want the trees to thrive, cultivate well till they are seven to ten years old. Spread ashes, manure, or salt broadcast. Stop cultivating in August, weeds or no weeds, and allow the wood to ripen thoroughly.

The Canadian Horticulturist.

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SEPTEMBER, 1881.

[No. 9.

TWO NEW VARIETIES OF HARDY APPLES.

We have received from our President samples of the Grand Sultan and of the Grand Duke Constantine apples, varieties imported by him in the hope of adding something of value to the list of very hardy apples which can be successfully grown in the colder parts of the Province.

The Grand Sultan is a conical fruit, of good size, nearly white, with some faint streaks of red on the exposed side. The flesh is also nearly white, juicy, breaking, pleasantly sub-acid, but not rich. The core is large, reminding one of the core of the Yellow Bellflower. Mr. Dempsey says that it is a heavy cropper. In the climate of Prince Edward County it seems to do well, and to ripen early in August.

The Grand Duke Constantine is also conical in form, of a light straw color, beautifully striped and splashed with bright carmine, dotted with numerous gray specks. The flesh is nearly white, juicy, sprightly sub-acid, agreeable but not high flavored, core small. Mr. Dempsey says of it that it failed when worked on the Paradise stock, but that as a standard it is a good grower. Of its bearing qualities he is not yet able to speak, this being the first year of fruiting. It seems to ripen at the same time as the Grand Sultan.

Mr. Dempsey has taken great pains to procure apples and pears from Europe, in the hope of being able to find some that will be sufficiently hardy to endure the severe climate of northern Canada. In these two varieties he has doubtless found some that will do well where the climate is far bolder than it is in Prince Edward County. We seem now to have a sufficient number of very hardy summer apples, but yet lack in very hardy long keeping sorts.

RASPBERRY NOTES.

The earliest to ripen on the Editor's grounds this season was the
HIGHLAND HARDY.

It is of medium size, bright red in color, too soft to ship well to a distant market, and of poor quality. Yet notwithstanding all these disadvantages, its early period of ripening gives it a great advantage, and when marketed in pint boxes brought this season ten cents per box. The canes are hardy, and in good soil yield very good crops.

CLARKE.

This berry is of good size, the color is bright enough to suit the requirements of the market, and the quality is very good. We have not found the canes to be quite hardy; they suffer sufficiently in severe winters to affect the crop considerably. When not injured by the winter the crop is good. The berry is not as firm as some, but with care in handling it will bear shipment tolerably well.

FRANCONIA.

Could we make this variety perfectly hardy, so that it would endure our changeable winters without injury to the crop, we would not be obliged to seek further to find a very satisfactory market raspberry. When the canes are not injured by the winter they bear a large crop. The berries are large, deep red, firm enough to bear carriage well, and of excellent flavor. At one time this was considered *the* market berry, but of late years we hear but little about it. Our market raspberry growers have been trying other sorts which promise to be more hardy.

PHILADELPHIA.

The peculiar, dark, purplish-red color of this berry so detracts from its appearance that it is not popular in the markets, hence raspberry growers have in a great measure discarded it. But it is one of the most hardy varieties we have, and its crops are simply enormous. The berries are medium in size, not very firm fleshed, juicy and pleasant, but not high flavored.

CAROLINE.

This has been highly praised as the most delicious of all raspberries. It is said to have been raised from a seed of Brinkle's Orange,

and from its resemblance to the Yellow Cap, supposed to be a cross with that sort. The fruit (which we had from plants growing on the grounds of Mr. A. M. Smith,) in color and general appearance answered the description given of this variety, but were far from being delicious, on the contrary, they were seriously lacking in flavor.

TURNER.

We have been pleased with this variety so far as we have tested it. The season of ripening is nearly as early as that of Highland Hardy. The berries are medium in size; color bright and attractive; flavor rich and pleasant. The canes are strong, very hardy, and very prolific if the suckers are kept in subjection, but they come up very profusely, and if not treated as weeds will soon cover the ground and choke each other.

CUTHBERT.

A valuable market variety in the estimation of most planters who have given their experience with it. From our short acquaintance with this berry we are inclined to think favorably of it, and believe that in our climate it will prove to be valuable. The canes are hardy, vigorous and very productive. The berries are large, firm enough to bear carriage well, in color bright red, and in quality very good. We commend it to the careful attention of all growers of the raspberry, whether for market or home use.

NIAGARA.

This variety was raised by Mr. A. M. Smith, of St. Catharines, and gives promise of being a very valuable addition to the later ripening sorts. The canes, which are very vigorous, have during the past winter proved quite hardy on the writer's grounds, and borne an abundant crop, which continues ripening for some time. The berries are large, dark red, tolerably firm, and of very good flavor. We think it is worthy of very extensive trial.

Of the black-cap varieties, we name three as worthy of attention :

DOOLITTLE'S IMPROVED,

which ripens early, Mammoth Cluster, ripening immediately after, and

GREGG,

ripening last. These are all excellent varieties, and worthy of a place in every garden where it is desired to have a succession of these berries. The canes are hardy and bear profusely.

HORTICULTURAL GOSSIP.—XIV.

BY L. WOOLVERTON, GRIMSBY.

THE FOREST TENT CATERPILLAR, (*Clisiocampa sylvatica*).—A few additional facts about this moth may be interesting, as it is now foraging among our orchards in such abundance. It belongs to a large family of moths, the *Bombycidae*, which includes the silk worm and many other beautiful species. The moths of *C. sylvatica* appear about July 1st, and lay their eggs in clusters of 300 or 400 on the twigs of trees, coated with a gummy substance for protection. The eggs hatch out simultaneously with the development of the young leaves in spring, and immediately begin work. At intervals the worms congregate in masses and cast their skins, a fortunate thing for the orchardist, who can destroy them wholesale at such times.

May 27th I found on nearly every apple tree vast gatherings upon the trunks. I watched one individual moult. A slit was first noticeable on the back just behind the head. A few struggles, and a new head appeared from within the old one, just like it, but of a lighter shade; a few more struggles, and the whole body was dragged out of its old skin, which had become too narrow to hold its growing occupant. Their instinct is remarkable. If three hundred of them are knocked down upon the ground and fall at some distance from the tree, they at once make for the tree again—not one mistakes the direction, but with one accord they crawl towards the trunk.

Fortunately for us, this caterpillar has several enemies. Besides being subject to disease and frequently to death at moulting times, there are several kinds of parasites of the order *Hymenoptera* which prey upon it. The Ichneumon fly, (*Physsa Pimpla*), often deposits its eggs beneath the skin of the caterpillar with its long ovipositor. The *Pteromalus Clisiocampæ* is another great enemy, as its name would indicate. It is probably one of these insect friends that is spoken of in the HORTICULTURIST for 1878, p. 19, as saving the orchards in Perth and Middlesex in the year 1877, when the caterpillars were so numerous that fears were entertained that the orchards would be entirely destroyed by them.

In 1872 we read of the *Clisiocampa Sylvatica* visiting the country about Montreal in large numbers and completely stripping many trees

of their foliage. Now it is our turn to be favored (?) with a large invasion. We hope the parasites will do their part in the battle, but we need to do our part also if we would be sure of the victory.

CULTURE OF THE AMARYLLIS.

This is a showy and attractive class of bulbous plants, the typical species being *A. belladonna*, a native of the Cape of Good Hope. The main point of excellence in the culture of this plant is in securing a good supply of healthy foliage. The reason for so many failures with plants which produce their flowers at a different time from leaves, is in not paying sufficient attention to maturing and encouraging a good supply of healthy leaves. As soon as the plants have finished flowering, they begin to make a fresh growth of foliage, at which time they should be potted, using for soil good turfy loam and about a third of well-rotted manure. Be sure it is well decomposed, as fresh manure destroys the bulbs when coming directly in contact with them. Mix the whole with a good sprinkling of sharp sand. When the leaves and bulbs are well matured, gradually dry off and store away in some cool, dry place until time for starting them into flower, which may be done at any time desired by placing in a little heat, and supplying water.

The showiest varieties of Amaryllis can be grown by persons having no other facilities than a window for growing them, and by their constant yearly flowering, give as much satisfaction as any bulbous plant in cultivation. By having them make their growth during the summer months, they do not require much attention except to supply water. They may be kept in some sheltered position out-of-doors, and when growth is finished stored away until the winter months, when they can be placed in the window and water supplied. The recompense will be from two to four spikes—according to size of bulb—crowded with from one to four of those well-shaded flowers which have to be seen to be appreciated.

A. johnsonii.—I class this as the finest for general culture of this genus of plants. It is of the easiest culture; the flowers are of the most gorgeous colors, and produced in greater abundance and with more certainty than any other kind. There are a great many varieties of the species, differing in the brightness of their colors, and having white stripes in the centre of the petals.

A. ackermannii.—Another fine species, is of a bright crimson color. Of this species there are some most beautiful varieties, as also some hybrids, between this and *A. johnsonii*, which are very fine.

A. formosissima (*Jacobean lily*).—This is another easily grown kind with scarlet flowers.

A. atamasco is a white kind, free flowering, and easily grown by amateurs, and those not having any greenhouse.

—M. MILTON, in *Country Gentleman*.

SWEET POTATO CULTURE AT THE NORTH.

Many suppose that sweet potatoes cannot be grown in New England. I think they are in error; certainly they are as to some parts and soils, for I have known of others growing them; and as the potato bugs are so troublesome to the Irish potato, perhaps some farmer reader would like to know how to do it.

PLANTS.—If only a small patch is to be raised, plants are best obtained of those who grow and advertise them for sale; or they can be grown in the following way: Early in spring, according to latitude and season, put the potatoes in a hot-bed; if of large size, split lengthwise, laying the flat sides down close together; cover with about two inches of fine rich mold, the richer the better. When the plants show above ground, add another inch of fine soil. Water with warm water as occasion requires; protect the bed on cold nights, and give air and sunshine to make them hardy. When wanted for setting, uncover the potatoes and pull off the best slips, and recover to let all others improve.

SOIL AND PLANTING.—A warm, sandy soil with a good exposure is best, although heavier soils, if rich and exposed to the sun with protection from the cold will answer well. Mark the rows, which had best run north and south, $3\frac{1}{2}$ feet apart; on these marks spread liberally, good barn manure, and then from each way turn a furrow over the manure to form a ridge eight or ten inches high, the base of which should not be disturbed by the operation, and should be not less than one foot wide; the top, when finished, three or four inches broad on which to set the plants. As soon as danger of frost is past, set the plants 15 or 18 inches apart in rows thus prepared; set the slips down to the first leaf pressing the soil close to them, especially around the roots. Moist weather is best for setting, but set at any time, well watered and shaded, they do nearly as well, sometimes better.

A close, hard bottom to the row induces the tubers to grow "chubby," less long and slim; for this purpose strips of sod are laid in the bottom, where only a few are grown as in the garden. Manure does not injure the sweet potato, as it often does the Irish, but for abundant production it should be used freely. After culture consists in keeping down weeds with hoe or rake, and hauling the soil upward to the plants. Keep the tops in a line on the top of the ridge, and free from taking root, admitting the sun to warm the ground.

GATHERING.—If a few are desired before the crop is ripe, you can run the finger down beside the vine, and when a large tuber is felt, detach it and replace the soil, leaving the rest to grow. A light frost kills the vines. Now is the time for gathering; select the first clear, dry day, and turn them out with the digger, first cutting and removing the vines; a sythe will answer for cutting these. Dig in the forenoon, and allow two or three hours to dry, with full exposure to sun and air; handle very carefully so as not to bruise or otherwise mar them. For preserving for late fall or winter use, provide suitable boxes or barrels, and take them to the field, having sufficient fine cut straw or chaff to pack or fill all interstices and

keep them apart. Pack the potatoes in these receptacles as carefully as if they were eggs, using first a layer of chaff or straw, and then of potatoes, finishing the package on top with straw. Remove them to a dry frost-proof room or cellar, where they will not *gather moisture* or *get chilled* in the coldest of weather, as these are the two first essentials to their keeping through the winter, always providing you have well matured, ripe tubers, to store at first.—W. H. WHITE, in *Country Gentleman*.

THE PEACHES OF 1880.

At a meeting of the Horticultural Society of Western New York, a very interesting paper was read by W. C. Barry, of Rochester, N. Y., giving the results of last year's experience of the ripening of the different varieties. We give the paper in full for the information of our readers:—

The season of 1880 was remarkably favorable for the peach crop in western New York. An experimental orchard—embracing 114 varieties, which we set out three years ago—came into bearing for the first time, and enabled us to test the leading standard sorts, besides many of the older kinds which are little known, as well as several novelties. I give the results of our observations, naming the kinds as nearly as possible in the order of ripening.

THE EARLY SORTS.

On the 24th of July we gathered fine specimens of Briggs' Red May. This variety originated in California, and was one of the first of the early sorts brought to notice. It has much the same character as Alexander and Amsden, and is hardly distinct enough to be grown under a separate name. Mr. Myers, a prominent peach grower of Bridgeville, Delaware, says it is less liable to rot than either Alexander or Amsden. He also states that a well known pomologist of Georgia, after having seen Briggs' Red May two years, believes it superior to Alexander or Amsden for shipping.

July 26.—We have before us splendid specimens of Alexander and Amsden. The difference between them is very slight. Alexander, however appears to average larger, and is less liable to decay upon the tree.

July 27.—To-day we received a fine basket of Waterloo peaches, gathered from the original tree. These are fully up to the standard. Next year we hope to have fruit from our own trees, when the opportunities for comparison will be better.

July 29.—This morning we find upon our table a remarkable collection of peaches. Alexander, Amsden, High's Early Canada, and Harper's Early are ripe and beautiful. All these varieties bear a striking resemblance to each other. High's Early parts more freely from the stone than the others, and Harper's Early seems to excel in flavor.

August 2.—We sold Alexander and Amsden to-day, at the rate of \$3 per bushel. The specimens were superb, many measuring eight inches in circumference, and weighing $4\frac{1}{2}$ ounces.

August 4.—Early Beatrice is now ripe, but after enjoying such magnificent fruit as we have for the last few days, this small peach fails to give satisfaction, and is of little value here. Mr. Myers writes me that he has marketed thousands of bushels of this peach, and he finds it valuable; though small, it is produced very abundantly; the tree is hardy, and the fruit is exempt from rot.

August 7.—Early Louise, now in perfection, seems to be a profitable market variety. Mr. Myers says that in Delaware the tree is remarkably productive, and when in bloom it is capable of withstanding, without injury, a greater degree of frost than any other peach.

August 10.—That delicious peach, the Early Rivers, is now in fine condition for eating. In this vicinity it is, beyond question, the best variety we have. Mr. Robert Hogg, in his Fruit Manual says: "This peach was sent to me by Mr. Rivers on the 20th of July, 1867, when it was first produced, and I was so struck with its superiority over all other early peaches, and its perfectly distinct character, that I considered it a fitting opportunity to record the name of the raiser by associating it with a fruit which cannot fail to become a universal favorite. In France it succeeds so well that Mr. F. Jamin says it is the finest early peach in France. Its only fault is that it splits at the stone." In one of my reports on peaches, I expressed the opinion that Early Rivers would not be of much value for market, owing to its thin skin and delicate flesh, but Mr. Myers, who for ten years has made a specialty of peach growing for market, informs me that Early Rivers is the most valuable of any of the early peaches for market. It is a great satisfaction to be able to commend so choice a peach for both purposes. In many instances only the coarser fruits can be recommended for market.

August 15.—Early Leopold is too small, and the quality too poor, to render it worthy of a place in the collection.

August 18.—Rivers' Early York is the earliest freestone we have fruited. Fruit of medium size, good quality, and tree yields well. Snow is a beautiful white peach, especially valuable for canning and preserving. It deserves more extensive culture.

August 20.—Large Early Mignonne is of medium size, fine quality, and a freestone. The tree, loaded with fruit, presents a remarkably fine appearance.

August 22.—Hale's Early is ripe.

August 23.—Acton Scott, Early Rose, Early Savoy and Belle Coquette are good peaches, but not large enough to be grown profitably. Belle de Doue, Belle Beauce, Grosse Mignonne and Belle de la Croix have the highest flavor, and can be recommended to all seeking after delicious fruits.

August 25.—Two of the best peaches in our collection are now ripe. I refer to Haine's Early and Large Early York—varieties which are undoubtedly identical. I have no hesitation in placing them at the head of the list, either for garden or orchard. George the IV. is another high flavored peach, resembling the two last named very closely. Cooledge's Favorite is one of the most valuable varieties. The fruit is not large, but

handsome, and of good quality, and the tree is so hardy that this peach will always be a favorite in the northern sections of this country, where many kinds fail owing to the rigorous and changeable climate. Mountain Rose, of recent introduction, promises to be desirable for market. It is not so richly flavored as the above, but large and handsome.

August 31.—Shanghæ, a very large Chinese clingstone peach, is ripe, and is remarkable for its fine flavor and handsome appearance. The tree is exceedingly prolific, and the fruit is so showy that it will take well in market. Most of the specimens measured nine and a half inches in circumference, and weighed eight ounces. It is a variety which merits attention.

THE SEPTEMBER VARIETIES.

September 1.—Early Alfred, Crimson Galande, Dagmar and Pucello de Malines are handsome white-fleshed peaches of medium size; but ripening, as they do, about the same time as Crawford's Early and Surpasse Melocoton, they cannot compete with them, and we shall drop them from the catalogue. Crimson Galande, with its deep purple cheek, is very handsome, and a tree full of fruit is an interesting object to look upon. Crawford's Early, on account of its size and attractive appearance, maintains its reputation as one of the best peaches for market. Foster and Surpasse Melocoton are rivals which are steadily growing in favor, as both are superior to Crawford's in flavor, and they average equally as large, if not larger. We had specimens of Surpasse Melocoton weighing $5\frac{3}{4}$ oz., and measuring $8\frac{5}{8}$ inches in circumference. Foster weighed $5\frac{1}{4}$ oz., and measured $8\frac{5}{8}$ inches in circumference. Crawford's Early weighed 5 oz., and measured $8\frac{1}{4}$ inches in circumference. Richmond (Dr. Sylvester's seedling,) does not prove satisfactory. Conkling is a large, fine yellow peach. Alexandra Noblesse, one of the newer sorts, is an excellent large peach, raised by Mr. Rivers from the old Noblesse. Early Silver, from which the Early Rivers was raised, is a splendid variety, and deserves extensive trial. Magdala, Morning Glory and Atlanta are medium sized, white-fleshed peaches, but not large and attractive enough for market. Atlanta deserves attention from amateurs for its delicate flavor. The Wager peach, with yellow flesh, parting freely from the stone, is said to be valuable for canning.

September 5.—Morris White is still a favorite with orchardists.

September. 10.—Jacques' Rareripe, resembling Crawford's Early, may be esteemed in some sections of the country, but it lacks flavor here. Monstrous of Douay, Chevreuse Hative, and Hick's Seedling do not possess sufficient merit to render their cultivation advantageous. Goshawk, raised from Cooledge's Favorite, adds size to the many valuable qualities of its parent. It is certainly very promising.

September 12.—Malta is a desirable peach for the Amateur's garden. The flesh is juicy and melting, and the flavor all that one could desire, but the tree is not productive enough to justify us in commending it for market.

September 15.—Leopold 1st, a Belgian variety, and Prince of Wales, one of Mr. Rivers' seedlings, are deficient in flavor, and we intend to drop them from our list. Cole's Early Red will be treated likewise. Just now

Brevoort is the best peach we have. Its flavor is delicious, and on that account it is certainly entitled to a place in every garden. The tree is only a moderate bearer, which would prevent its culture for market. Old Mixon Free is now in first-rate condition for eating, and deserves to be classed (as it is) among the most valuable of peaches for garden or orchard. In addition to its many other good qualities, it has a rich flavor, which will always make it desirable. Stump the World, although a popular market peach, has not flavor enough to commend it to the attention of amateurs.

September 20.—Susquehannah, a large yellow peach, has a rich, vinous flavor. Hill's Chili has been highly recommended, but I do not see why it should be. The fruit is not large, and the flavor is indifferent. Late Morris White is a variety of Morris White, resembling it in every particular, but ripening ten days later. The Nectarine peach is by all odds the best of its season. It is said to have been raised from a stone of a Dutch nectarine, called Grand Noir, and has a peculiarly delicious flavor. White Melocoton is a large, handsome peach, juicy, melting, and of good quality. Carmine has no flavor, and should therefore be rejected. Red Cheek Melocoton and Mammoth Melocoton are fine, yellow-fleshed peaches. Raymacker resembles Crawford's Late, and does not seem to be any improvement upon it.

September 26.—Van Buren's Golden Dwarf is a large, yellow peach, resembling Crawford's Late; it is a clingstone. The tree is of dwarf habit, and very prolific. Princess of Wales, raised by Mr. Rivers from seed of Pavie de Pompone, is a beautiful cream-colored peach, melting, and of good flavor; valuable on account of its lateness. Crawford's Late continues to be valued as a late peach. Poole's Large Yellow, ripe at the same time, is a very large yellow peach. The flesh is finer than that of Crawford's late, and from what I have seen of this variety, I think it deserves a good deal of attention. It seems quite an improvement on Crawford's Late. Of its bearing qualities I am not able to judge.

September 27.—Lord Palmerston, another of Mr. Rivers' fine seedlings raised from the Princess of Wales, is very large, skin creamy white, with a pink cheek; flesh fine, juicy and rich, stained with red at the stone. It deserves careful trial, as it promises to be of great value to succeed Crawford's Late. Ward's Late Free is a desirable white-fleshed variety. Its flavor is excellent. Druid Hill, raised in Baltimore, has an exceedingly pleasant flavor. I should not hesitate to rank it among the best of peaches. It has an additional value in ripening so late, and it surpasses Ward's Late Free in flavor. Walburton Admirable is large, juicy and delicious; a first-class peach in every respect. Heath Free is a choice late peach. McClane's White does not equal it in flavor. Carpenter's White is very good, and merits attention.

October 2.—Lady Palmerston will be valuable further south, but it is too late for this locality. This remark applies equally well to Smock Free, Salway, Sample White, De Graw's White, Delaney Heath Cling, Jersey, Comet, and Jones' Seedling. Some of these in such exceptional seasons as 1880, ripen here pretty well.

A few trees did not produce fruit. This will account for the absence of some kinds from the list.

Several varieties of the very early peaches show a disposition to decay, and their value is greatly lessened by this defect. Another year's trial will establish to a certainty the advantages which some sorts possess over others in this respect. As will be seen from these notes, several old peaches which have been neglected of late have been found to possess qualities which will merit attention. We expect next year to fruit the following:—Saunders, Wilder, Musser, Conkling, Mrs. Brett, Bradley, Honeywell, Gov. Garland, etc. Mr. Myers says that Saunders is not quite so large as the Alexander, but has fine color, and is entirely free from rot. The tree is very productive, and ripens its fruit a few days after Alexander. Downing ripens with Alexander and Amsden, and is of medium size and free from rot. Wilder, of the same season as Alexander and Amsden, decays like these varieties.

This collection of peaches has been the most interesting that I have had the pleasure of examining. I hope that other fruit growers will favor us with the results of their experiments, so that we may assist each other in determining which kinds to keep and which to reject.

W. C. BARRY, *Rochester, N.Y.*

CAUSE OF BLACK KNOT.

BY N. HENDRICKZ.

There seems to have been and still to be an opinion that the outgrowth on the plum and cherry trees, commonly called black knot, is of a fungus nature. Let me ask, before proceeding farther, what is the cause of the knot found on oak trees, or wild roses, or blackberry shrubs, or vine leaves, or linden tree leaves, or oak leaves, and in Europe also on beech tree leaves, which afterwards turn out when dry like beads for necklaces, or for other ornaments? All these have insects inside. Having all due respect for persons and their opinions, I dare say there are many who read a great deal, and judge by what they read, so they form their knowledge upon the authority of others; but to study the facts of nature by themselves, and watch the result of an indefatigable investigation into matters of nature is not given to everybody, in fact cannot be done by the most of men, and so we must be very forbearing with their opinions.

When about fifteen years of age I liked to read about insects and study their habits, so what I say is formed by my own experience rather than what I have gleaned from authors, though at that time I

happened to get a book of "God and His Providence in His Insects," describing how wonderfully God has given to every insect the means of progeneration, even with the odds of man's destructive inventions against them, and also other natural enemies, such as birds and insects. Unfortunately the name of the writer has passed out of my memory. I know it is a Belgian writer. He explains many facts in ways which seem plausible, among others this of the black knot. I had already remarked this, and as well as the author came to the conclusion that the cause of it is an insect which instils through a sting an acid into the bark of the tree. This causes the sap to become poisoned, and makes it swell and become of a spongy nature, thus enabling the egg which is laid into the cavity (made by the proboscis of the insect) to hatch out by the heat of the sun. Then it grows and works through the soft spongy matter until it becomes alive, remaining then until it becomes a reddish worm about half an inch long. It ordinarily drops out towards the end of July, digs into the ground and turns into a chrysalis; some come out and some remain, like the potato slugs. The birds kill a good many off. It prefers the plum tree which exudes the gummy matter, thus the cherry tree as well.

You will not find a worm in every outgrowth, because not every egg happens to hatch out, or to remain in the cavity the insect makes. It begins its devastating work early in the spring, many remaining and hiding in the crevices of trees or elsewhere. If the spongy matter be cut off the worm dies, and though we do not burn it, the insects cannot live any longer. As long as there be any of the acid left in the bark it will run up, but if well pared off, the bark will partly grow over it.

There is besides a plum borer, having the same shape as the apple borer, big headed, which runs under the bark into the tree and causes it to die. We have all these pests to contend with. Until an effort be made by disinterested and generous persons, single-handed work will not do, for in a short time cherry and plum trees will have to go. In this neighborhood none care to cut down their trees, or to pare off the evil, so that there is an ample chance for them to multiply. They will afterwards attack the pear and peach trees, and even apple trees. With all our laws it remains where it is, as the thistle law, without sanction. The fire will not destroy all these enemies if man has no will to work to combat them, and he will have to do so to enjoy the

fruits of his labor. Besides, this insect is clannish. If you have a tree infested separated from others by a great distance, it seems to remain there until it has completely destroyed this. If you cut this one down, and have not previously destroyed the insects before they hatched out, they will fly until they find other trees; and the year after you have cut down the infected one all the other trees will be more or less stung. I found the insect to be very much like the curculio, but instead of having black ashy wings, they were brown, and of a hard shelly texture.

NOTE BY THE EDITOR.—Will Mr. Hendrickz favor the readers of the HORTICULTURIST with the name of this insect which he believes to be the cause of the black knot, or give a careful description so that it can be identified.

NOTES ON THE POTATO BEETLE.

BY PROF. E. N. CLAYPOLE, YELLOW SPRINGS, OHIO.

The present season has been one of unusual extremes here, surpassing all that "the oldest inhabitant" can recall. The thermometer, a better authority than "the oldest inhabitant," confirms the statement. In November it marked 24 deg. below zero; for three successive nights in the Christmas week (Dec. 29, 30, 31,) it reached 18 deg. below zero, and the highest point reached at noon on the 29th was 7. These may not be unusual figures for Canada, yet for southern Ohio they are unexampled. On July 8th the thermometer reached 101, 9th 102, 10th 102, 11th 101, 12th 103 degrees. At 1 p.m. on Aug. 6th it marked 92; at 1.30 68—a fall of 26 degrees in 30 minutes. The rainfall or want of rainfall has been of the same phenomenal nature. A long hot drought in May, another in July, during the hot spell, and another at the beginning of August, which still continues. Few crops can possibly reach an average here this year. Potatoes have been dried up. On my own land the most exposed parts have about one root in three or four, parts less exposed to the sun have all the roots, but the growth is suspended in the late kinds, while the early kinds (Early Ohio especially) have been stimulated by the heat and moisture into a second growth after the rain. The yield is from one-third to one-half what it should be.

The dry weather makes it much easier to deal with the potato beetle, though they are more abundant in dry than in wet seasons; the poison is not washed off by the rain, and consequently it is far more effective.

After numerous experiments on this head I have adopted the following plan. Most of my neighbors either knock off the beetles, or pick them off, or sprinkle the plants with poisoned water. The first two modes are objectionable on account of the number of times they have to be repeated. If you pick your plants clean to-day you must go over them again next week, for others will be hatched. Moreover, the repeated tramping hardens the ground, and makes the labour of raising the potatoes, either with plough, fork or hook, very much greater. The third mode involves the carrying of too much water. I always now use the London purple. It is very much cheaper than Paris green, and being lighter, there is more in a pound. Mixing it with 60 or 80 parts of ashes or fine road dust, by passing it two or three times through a sieve of wire gauze containing about ten meshes in an inch, I can carry enough in a large bucket to poison half an acre of potatoes. I fit a handle to an old pint tin and fill it with the poison; then walking along a row I sprinkle the plant by jarring the handle with a light stick. In this way I can go over an acre in a day. I have grown this year about two acres. The dust should be put on when the air is perfectly still, so that the lighter parts of the mixture which contain most purple shall fall on the leaves. Dew or no dew is of no consequence; when once dusted the leaf will retain the poison until it is washed off by rain. A little flour is said to be effectual in preventing this, but my experience has not confirmed it, and I see little or no use in adding it to the mixture. In the early spring, when the plants are just coming up, it is a good plan to poison slices of potatoes and lay them among the rows. It helps to save the very young plants when they are so small that it is difficult effectually to poison them. Later on, as soon as the young plants appear, I choose a time when the barometer and the sky indicate dry weather for at least a few days, and get the plants thoroughly dusted. This is easy if the potatoes were cut small, because there is only one head. If this is well done, and no rain follows for forty-eight hours, the whole ground will be clear of grubs, and hundreds of beetles will be also found lying about with their legs spread out—a sure sign that they

are dead as door nails, not "playing possum." The crop is now safe until the second crop of beetles appears, which will be nearly a month. The second crop consists of those few that escaped the first poisoning, and others which are contributed by neighbours who do not poison. They are much yellower than the spring brood; these lay their eggs, which hatch in a few days, and the second brood is come. (I have observed, by the way, that when the plants are well poisoned, by far the greater portion of the eggs is laid not on the potato but on weeds and even on the ground. Many of these probably come to nothing, the young grub finding no food close by.) I watch until these are beginning their work in the heart of the plant, and then go over and poison a second time, choosing as before a dry spell. This operation requires rather more time and material than the former, because the plants have tillered out and have several heads. It is economy of time and labor, however, to dust them all, and the labor may be lessened by using a larger dusting tin. It is cheering to go over a patch forty-eight hours afterwards and see it almost cleared of the "thieves;" only a solitary one here and there surviving. This is enough for most potatoes. Only the very late kinds require a third dressing, while for the very early ones a single dressing is sometimes sufficient. This is by far the easiest method of protecting the potato that I have been able to hear of or devise, and it is not expensive, two or three pounds of London purple being enough for an acre of ground. The price of this substance varies greatly in different localities, from 25c. per pound down to 10c., or even less, being asked.

The contrast between my plants and those of my neighbors who try to sprinkle with water, but find it too laborious, is ample testimony to the efficacy of the method I have described. The only point to which I wish to call attention as very important, is the choice of the time for dusting the plants. Choose a dry spell if possible, but always choose the time when the eggs are beginning to hatch, otherwise much of the labor may be thrown away, either by a rain which will wash off the poison, or by the new growth of the plant, which will supply the grubs with food in the earlier stages, and enable them to pass safely the "dangers of infancy."

THE apple crop this year is light, and our readers would do well to exercise caution in disposing of their surplus stock of winter fruit.

CORRESPONDENCE.

REPORT ON PLANTS RECEIVED FROM THE F. G. A.

A few of the fruit trees, &c., received by me from the Association in its early history perished during transit. Two or three others met with accidents. Clapp's Favorite is a vigorous grower. Set fruit last two years, but it disappeared before maturity. Beurre d'Anjou pear seems less vigorous than the preceding, but has had less care. It has not fruited yet. Grime's Golden Pippin is a strong, vigorous grower, and has fruited two years. The fruit is of fair appearance, and the quality first-rate. I consider it a fine amateur variety. Glass' Seedling plum—vigorous; fruit sets badly; other varieties on all sides bear well. It has a very warm, north-easterly aspect, well protected from cold winds; perhaps its position is too warm. Has anyone else had a like experience? I have not obtained a ripe plum yet. The Downing gooseberry is the best I have of this class. Arnold's Diadem raspberry is a rampant grower, hardy, productive, and delicious. The grains of the berry separate greatly, and the berry crumbles, which is against it for market purposes. But as a garden sort it is first-rate, for with proper care of the canes one can have this excellent berry from the beginning of the raspberry season until the frost kills the foliage. Mr. Arnold's strawberry is also good, but as it has not had full justice at my hands I cannot compare its merits with those of other varieties. The Saunders raspberry received last spring has made a marvellous growth. The question of its vigor on my grounds is settled. I have said nothing of the hardiness of the varieties named, for the reason that ours is a locality yet within the precincts of the Ontario fruit belt, and therefore too genial to test any save those varieties already known to be tender.

—L. P. MORSE, *Lowville, Nelson.*

I am glad to notice the praise-worthy efforts of the Directors to please, in the list of plants proposed for choice in the annual gift to the members. I cannot help but think that if the practice is continued of giving some plant annually, that the list may be extended, for it is noticeable in your meetings how much stress is laid on the quality of the soil, the climate, and locality. It is therefore certain that the value of a plant must vary amazingly in different localities. I was much interested in a late number of your serial, especially for the valuable information afforded on grapes. In the February number there is an article giving an account of the failure of the Burnet grape, in spite of the care of a well-known practical grower. My case last summer was identical. In July last I left on a holiday trip to England, the Burnet then thriving as well as one could desire. On my return in the latter part of August my first visit in my garden was to that vine, and I was grieved to find every bunch mildewed and shrivelled, and nearly every leaf excessively scalded. A Salem vine adjoining was also affected, but not much, and I thought perhaps an early frost had caused the mischief. At all events, not seeing the beginning or progress of the mischief, I concluded to say nothing about my Burnet.

RICHARD BAIGENT, *Toronto.*

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THE MIDSUMMER MEETING.

The Midsummer Meeting of the Fruit Growers' Association of Ontario was held at Owen Sound on Wednesday and Thursday, the 24th and 25th of August, 1881. There was a very general attendance of the members from that vicinity, and a goodly number from a distance. The display of fruit was much better than was expected, the crop in that section having been nearly destroyed by the untimely frost which visited the place early in the summer.

President Dempsey called the meeting to order, and after a few words of hearty salutation to the members present, called attention to the first subject, namely: To what insects and what diseases are the plum trees liable in this vicinity?

The replies to this question indicated that the depredations from insects were not serious. The tent caterpillar and other leaf-eating insects were to be found occasionally, but they had not been sufficiently numerous to cause any alarm or make it difficult to keep them in check. The Black-knot was mentioned by nearly every speaker as the most troublesome disease with which they had to contend. It seems to have been more than usually prevalent this year, and to have spread with great rapidity, affecting many of the trees so very seriously that there seems to be no hope of saving them. Mr. John Chisholm stated that it had been more serious in his garden than ever before, and that the only adequate amputation in many instances would be the entire removal and burning of the tree. He thought that the disease thus far had been chiefly confined to the blue plums. Mr. D. R. Dobie spoke of it as being frightful this season, and believed it probable that the dry season favored the spread of black-knot. It had attacked his yellow plums, such as the Coe's Golden Drop and Washington, but was worse on the Jefferson and McLaughlin. Mr. R. J. Doyle thought that trees growing in a

wet subsoil were more subject to black-knot than those in well drained ground, and believed that by thorough underdraining and watchful amputation the disease could be kept in subjection. Several speakers stated that the black-knot was very abundant in some sections upon the wild plum and wild cherry trees, and particularly so on the Manitoulin Islands.

The Secretary stated that some twenty years ago he had noticed the black-knot was very abundant on the wild plum and cherry about Orillia, and from there to Coldwater. It was not now so prevalent in the Niagara District as formerly.

Several members brought plums to the meeting having the gum exuding from the fruit, and otherwise defective specimens, some of them showing the marks of insect depredations, in order that they might be examined by those who were familiar with the work of the curculio, but very careful examination failed to discover any evidence of the presence of the curculio. Plum growers at Owen Sound may congratulate themselves that the curculio has not yet found his way to their plum trees. President Dempsey remarked, in this connection, that in Prince Edward County they had found the rotting of fruit on trees before ripening a much worse evil than the curculio. The curculio could be kept in subjection by jarring the trees and catching the insects, but that no method had yet been discovered of preventing the rotting of the fruit.

The subject of the borer in apple trees was next considered, but the discussion revealed the fact that it had not been troublesome at Owen Sound, but one person having ever seen any in his apple trees.

The discussion on the grapes best adapted to this section of country revealed the fact that quite a number of varieties can be grown and ripened. Mr. Brownlie had grown the Eumelan, Delaware, Massasoit, and Concord. He remarked that the Eumelan succeeds well, and that he had not found it subject to mildew; that the Concord in some few seasons had hardly ripened, and that it was not wise to plant varieties which ripened later than the Concord. Other members had also grown the Champion, Creveling, Clinton, Brighton, Burnet, Hartford Prolific, Northern Muscadine, Rogers Nos. 3, 4, 9, 14, and Salem. It was remarked that at Owen Sound the Burnet did not ripen any earlier than the Concord.

Small fruits generally were grown with good success. Members found no difficulty in growing Raspberries, such as Franconia, Brinckle's Orange, Knevet's Giant, Pride of Hudson, Cuthbert, Turner, &c. English gooseberries were generally subject to mildew, but Downing and Houghton did well. Strawberries were also grown without difficulty. Mr. T. C. Robinson said that the Wilson was the most reliable sort; no other had yet proved to be as profitable for market. He thinks that the Crescent will outcrop the Wilson. President Dempsey manures his strawberries with ashes and bone-dust, applying ten barrels of unleached hard-wood ashes to the acre, and obtains from the Wilson a yield of six thousand quarts to the acre.

The resident members spared no pains to make the visit one of great pleasure to those who came from a distance, kindly taking them to several places of interest in the immediate vicinity. Under their hospitable escort we visited Ingle's Falls, a most picturesque spot of great natural beauty; the gardens of Judge Macpherson, Doctor Cameron, and Mr. Trotter; and the rural homes of Messrs. Glen-Airston, William Roy and J. R. Doyle, at all of which we were most hospitably entertained and found much to interest every lover of horticulture.

At Mr. Doyle's we found most extensive plum orchards, some in full bearing and some more recently planted, the number of plum trees running into the thousands; indeed the largest plum orchard we have ever had the pleasure of seeing. The trees were all vigorous and healthy in their appearance, and many of them well filled with fruit. Although they have no curculio to trouble them at Owen Sound, they are not wholly exempt from the ills to which the horticulturist is heir, for the frost had so interfered with fruit culture there this season that but few of the plum trees were yielding a crop. Mr. Doyle also shewed the members a barrel, having the staves so arranged as to admit of ventilation of the fruit packed in it. This barrel is specially adapted to the shipping of early ripening apples and pears, which require to be forwarded in hot weather.

After a two days' meeting, in which much very valuable information was elicited, and much enjoyment experienced through the very kind attentions of the horticulturists of Owen Sound, the members from abroad returned homeward, carrying with them most a gratifying

appreciation of the pleasure of their visit, and hoping that it may not be long before they may have the opportunity of again enjoying a meeting with such kind friends.

NEW FRUITS.

We have received from Mr. James Dougall of Windsor some interesting samples of seedling fruits raised by him. Among them is a sample of his new seedling cherry, which has been already noticed in the last volume of the CANADIAN HORTICULTURIST, and is named by him the

WINDSOR.

The specimens received are above medium size, nearly black, flesh very firm, juicy, very agreeable flavor, having that mingling of saccharine and acid which is so refreshing. The stone of the fruit is very small. Mr. Dougall says of it: "Enormously productive; very hardy, being the only Biggareau or heart cherry that had not its fruit buds winter-killed last winter on my grounds; even Dukes were killed."

The remaining samples were of seedling gooseberries which Mr. Dougall has raised.

SEEDLING NO. 1

was raised from seed of an English gooseberry fertilized with the Houghton. The berries sent average larger than those of the Houghton, oblong or oval in shape, color a deep rich green with light veins; flavor is excellent.

SEEDLING NO. 2

is another variety from the same parentage as the foregoing. The berries of this are of about the same size as the Houghton, nearly round in form, and yellowish green in color, and of a rich, pleasant flavor.

SEEDLING NO. 10

was raised from seed of the Houghton fertilized with an English gooseberry. It is oblong or oval in shape, nearly as large as the Downing, and of the same light-green color; flavor very good.

HYBRID SEEDLING NO. 2

is descended from the wild prickly-fruited crossed with an English gooseberry. It is the second remove from the wild. The berries are

oval in form, thinly sprinkled with fine hairs, shewing its descent from the prickly. About the same size as the Houghton; the ground color is a very light straw color, almost white, sprinkled with minute red dots. The flavor is very pleasant.

HYBRID SEEDLING NO. 7

is also descended from the wild prickly fruited crossed with an English variety, and is also the second remove from the wild. These berries are oval in shape, about the size of Smith's Improved. Well covered with short prickly hairs; color dark purplish red; flavor very good.

Mr. Dougall says of the Hybrid Seedlings No's 2 and 7, "I think these will be the parents of a variety that will probably displace all others. They are strong, upright growers. I measured a shoot that grew from the bottom of one of these varieties, it is now four feet nine inches high, (branched) covered with bright brown prickles. It will no doubt reach nearly six feet by the end of the season, though they are not getting fair play, being grown under fruit trees. None of these seedling gooseberries have ever mildewed, though planted in different localities. I have several others, both of the hybrids and crosses between the English and Houghton, but being transplanted last fall, they have but little fruit on them, and that not fully grown. I have a No. 9 hybrid of the same strain as No's 2 and 7; the fruit is much larger than either, smooth, and of a pale red, but not ripe yet, and only four berries left on the bush. The catbird, robin, and Baltimore oriole are very bad on gooseberries here, more especially the oriole. I had to remove my bushes to a place near my house, and cannot save them there."

EFFECT OF THE HEAT AND DROUGHT ON THE RIPENING OF GRAPES.

Every season has something peculiar to itself, and the peculiarities of this season have had a marked effect upon the ripening of grapes. The cool, moist weather of June had the effect of retarding the period of the opening of the blossoms, especially as compared with the season of 1880, and caused the setting fruit to grow very slowly. Hence all of the early ripening varieties came to maturity some ten days, or more, later than they did last year. But the cool and showery weather of June and first part of July was followed by the

extreme heat of the latter part of August and the first days of September, and this had the effect of hastening the ripening of the later varieties of grapes, so that the interval between the earliest and later sorts has been very much shortened, and we have the Concords following in quick succession upon the heels of the Hartford Prolific. The varieties first to ripen in the writer's grounds were the Champion and Moore's Early. There seemed to be no difference in the time of ripening of these two grapes; but there is a great difference in quality and flavor. The Champion is much inferior in this respect to Moore's early, and we predict that in time it will be superseded as an early market sort by the Moore's Early. The Champion possesses the advantage of being a more vigorous grower, and at three years of age the vine will be fully twice as large as that of Moore's Early, and at that age is capable of yielding a much larger quantity of fruit. The two vines, however, appear to be equally hardy and capable of resisting any amount of cold, both ripening their wood early and perfectly. We believe they can both be grown anywhere that any grape will grow, and will both ripen their fruit every year. The Champion has been fruited at Winnipeg, in Manitoba, with complete success, and in a year or so more the Moore's Early will have been tried there also.

Next to these, and with less interval of time than last year between their periods of ripening, came the Massasoit (Rogers No. 3). This is a large red grape, having the flavor that is noticeable in all the Rogers varieties, and while large in berry is usually small in bunch, a good-sized, well-formed bunch being the exception. It is nevertheless a good variety to have in one's garden on account of its time of ripening and the large size of the berries, but is not likely to prove to be a popular market sort on account of its defective clusters.

Hartford Prolific comes next in time of ripening. In the writer's estimation this is a poor grape, but little better than the Champion in quality; yet, hitherto, on account of its early ripening, it has been found to be a profitable market sort. The vine is not as hardy as either of those previously mentioned, and will not be likely to withstand the cold of our severe latitudes. Better grapes, ripening as early, will soon crowd out the Hartford Prolific.

The Hartford Prolific was but fairly ripe when it was discovered that the extreme heat had brought on all at once a host of other sorts

that usually continue to come in one after the other. Wilder, Salem, Agawam, Martha, Brighton and Concord were all in eating condition, and bunches were easily found on all these that were quite ripe. Yet the extreme heat and drought seem to have unfavorably affected the flavor of most of them, the distinguishing characteristics of each variety being less marked than usual. In such a peculiar season it is not easy to assign to each variety its proper position, nor to feel satisfied that the opinions formed at this time will be sustained next year.

The Burnet did not ripen any earlier than the Concord or Salem this year at St. Catharines, and we must wait and note its behavior in coming seasons before we can feel sure where its place really is.

The Vergennes, which is claimed to be an early variety, was not ripe as soon as the Concord, but next season may show a greater difference.

The Delaware is usually ripe some ten days before the Concord, but this season it is not as ripe on this 15th day of September, but will probably come in before the Concord is all gone.

These notes will serve to show the peculiar effect of the season upon the ripening of some of our varieties of grapes, and to put us on our guard against hasty conclusions based merely upon the experience of this season.

PRACTICAL SUGGESTIONS ON TREE PLANTING.

BY P. E. BUCKE, OTTAWA.

Some suggestions on the subject of tree planting in streets may not be out of place. In drawing attention to this subject, we do so for the ornamentation of any city, town or village that may wish to put on a perpetual robe of evergreens, or by planting deciduous trees, that they may, with the annual return of spring, break forth with the cooling shade, which refreshes the pedestrian, gladdens the eye, and ornaments the street.

In the first place, every town should have set apart in its infancy some place for rural recreation, such as a park or square. In some well fenced, well cultivated part of one of these, various forest trees should be sown, say from one-half to one acre of trees in nursery rows. By this means a sufficient number of trees would thus be obtained for

planting many acres, or many miles of trees along the roadside. These rows would of course require to be thinned by removing the trees and replanting them from time to time, but this rather than being a drawback would be an advantage, as the oftener a tree is transplanted the easier and better it grows, and the less danger there is of its dying. The plot of seedlings should be so grown that a cultivator or gang plow could be run between the rows, which should be from three to four feet apart. The rows themselves should be carefully hand-weeded until the trees cast so deep a shade that nothing would grow under them. A nursery of this kind would have many advantages. The town trees obtained from it would be pretty much of a uniform size. They could be easily come at, and handy for planting. They could be put in charge of some elderly residenter, who by selling them to individuals at 10 cents per tree for street planting, and 25 cents for other purposes, (the purchaser to remove them,) they would be made to defray all cost and yield a money revenue to the town, besides making it an attractive place to reside in.

The best varieties of deciduous trees for town decoration would be the horse chestnut, hard and soft maples, black walnut, butternut and the elm. The *acer negundo*, known as the box elder, Manitoba maple, &c., are also very rapid growers, and make pretty ornamental trees.

Some municipal regulations would be required so as to order the planting. Certain streets should be set with certain varieties of trees or combinations of them, such as two maples and an elm alternately, but as a rule different trees for different streets are preferable. The streets might be named after the variety of tree planted in them. The municipality should also regulate the distance apart for planting, and the distance to plant from the centre of the roadbed. Many Canadian towns have the trees set at all distances apart and on any line the resident may choose; thus grown the tree line has the appearance of an ill-set saw. Trees are always beautiful, but planted as indicated they present a very bad effect.

As the plan suggested for raising the trees in a nursery has not been followed in many places, it is still not too late to commence, and it should be borne in mind that all seeds must be sown in well pulverized, rich ground so soon as they ripen; on no account should they be allowed to dry; it is absolutely necessary therefore that the soil should be kept in a continual state of preparation. A hoeing crop

should be taken off the ground the previous season if the land has been lying in sod. Some maples, elms and other trees ripen their seed during the early and middle part of summer, and these should be at once committed to the soil as soon as ripe, and will make a foot of growth the first season. The evergreens are more difficult to manage from seed, and should consequently be obtained from professional nurserymen who make a business of raising them. They should be purchased at not less than two years old, and may be planted out at from one to three feet high. No evergreen should be planted in the autumn, nor should any tree be obtained that has been dug in the fall and heeled-in all winter. They should be dug from the rows in the spring as early as practicable, and immediately planted. No manure should be used about the roots, but a mulch of straw or long coarse manure could be used with good advantage to cover the roots, and this would assist in keeping the weeds from growing. The soil should not be dug with a spade after the trees are planted, but should be kept light and friable on the top with a hooked fork, sometimes called a potato digger.

The preference should be given to home nurseries for young evergreen trees to set in the town plot for future use, and it should be seen that the roots are kept moist from the time the trees are taken up until they are replanted. If they have to be carried far the roots should be puddled in a batter made of clay, and if moved to any considerable distance a further precaution should be taken by covering with old carpet bagging or some such material.

Advantage should be taken of cloudy or drizzling days, and better success will be secured. Evergreens should never be procured from a long distance unless the party ordering is previously satisfied that the man they are to be obtained from is very reliable. Transient tree peddlers should be scrupulously avoided in this matter, as they will try to dispose of trees heeled in all winter, and will care very little as to the moistened state of the roots.

We have heard it stated by practical nurserymen that in some cities it is difficult to get trees to grow in the streets, but we think if a little extra precaution is taken there will not be much difficulty in making anything like good stock to flourish. If the trees require watering, as they will if the weather is very dry after they are set, care should be taken not to put on too much moisture, but the rule

is to err in the other direction. We need hardly say that the Norway spruce, and Austrian and Canadian pines are the trees best adapted to our soil and climate.

One of the greatest difficulties the tree planter has to contend with is the highway cow and the Sunday horse; that is, horses which after working all the week are allowed to rove at large during the day of rest. Canadian stock laws, as a rule, are defective, and there is a general difficulty to getting parties to act in the matter of impounding stray cattle, but no tree is safe while these depredators are at large; and constables should be required to carry out the laws respecting injurious animals in the same way they do to individuals who make themselves a public nuisance.

REPORT ON THE SMALL FRUITS OF 1881.

BY B. GOTT, ARKONA.

I shall confine myself at present to the notice of those fruits of most promising utility that more immediately come under my direct observation, and of their behaviour with us in the present season. I may be excused in adding that small fruit culture, by which is meant the early summer fruits, is becoming more and more deeply interesting and engrossing to a still greater number of our industrious people. Owing to the indefatigable efforts of the Fruit Growers' Association in this direction, and the fine, well-adapted locations and soils of our country, this praise-worthy industry is rapidly spreading amongst us on every side. Some growers are reaping—or rather picking—golden harvests in this promising field. There is little doubt that much of this flattering condition of things among us is very largely due to the well disseminated knowledge of the Fruit Growers' Association of Ontario. Their efforts in this respect are laudable, and command the well-informed throughout the country. May this good influence very largely increase in every county.

As the most popular and acceptable, not to forget the most profitable, of all the small fruits of this climate, I shall beg first to introduce the strawberry, because the public are most anxiously concerned about them, and at the present time anything relating to this savory fruit is most intensely acceptable. I may be excused in omitting a

notice of cranberries, as the culture of these has not so much as been attempted in our county, although we have not very far from our homes very fruitful natural plantations of cranberries, from which has been gathered large quantities of very fine fruit. Next after my notice of strawberries shall follow that of raspberries and blackberries, as being closely related in interest on the list of small fruits in this country. There may follow brief notices of gooseberries and currants, being of considerable interest to our people and also in our markets.

STRAWBERRIES

may be mentioned in the following order, as being those of greatest importance: Sharpless, Captain Jack, Duncan, Glendale, Arnold's Maggie and Bright Ida, Marvin, Col. Cheney and New Dominion. These are all good varieties, and were I not afraid of provoking your smiles, I should like to have added to the list Wilson's Albany and Charles Downing, as still the leading and most profitable varieties.

Crescent Seedling is undoubtedly the coming market and family strawberry, having characteristics to fit it for extended and general cultivation. It is hardy in plant, large and uniform in fruit, of fine flavor, bright, tempting color, and possessed of considerable solidity for transportation. It takes well in the market.

Cumberland Triumph is also a very promising sort, in many points resembling Crescent, but by some thought to be of far finer flavor. It is characterized by great productiveness and uniformity of berry, and well deserves a place.

Windsor Chief is a new, early and fine fruit; large size, good color and fine flavor, but unfortunately too soft for distant shipping.

Sharpless is a very highly puffed up variety—puffed up, probably, more for the purpose of money making than to promote the interests of fruit culture. It has not, in our experience, fulfilled the promises made for it, though we believe it has proved very satisfactory in some localities. With the exceptions of its large size and solidity of berry it has no points to fit it for general favoritism, or to recommend it to the public as either a profitable family or market sort.

Captain Jack is a comparatively new but very promising strawberry of the Wilson type. The plant is hardy, and a good grower and bearer, and the fruit is solid and of fine color and flavor. Would be profitable for market.

Glendale, for a late sort, is the most promising coming strawberry for family and market purposes. It is considered far in advance of Kentucky, and will very likely supersede it for late market purposes.

Duncan is a very promising fruit, possessing very high internal qualities, as its flavor is the highest and most distinct of any sort. It is not very solid, however, and the plant is a poor bearer.

Arnold's Maggie and Bright Ida are new Canadian fruits, originated by Charles Arnold, Paris, Ont., the well known champion of new fruits. Where tested they are found to possess some considerable promise, and are firm in color and flavor; conical and prepossessing.

Marvin is a new American sort that may yet become distinguished among our Canadian lists of fruits. It has not been very widely disseminated as yet, nor can much be said of it.

Col. Cheney is not among the new sorts, strictly speaking, but it is a fine, profitable variety, and worthy of more general introduction. It is of the Sharpless type, but is far ahead of that variety in productiveness. It is increasing in favor as a profitable market sort.

New Dominion is a promising new Canadian strawberry of recent introduction. We have fruited it for one or two years, and think that for family and market purposes it is a decided acquisition. It is hardy in plant and fine in fruit, of the Crescent Seedling type, and of good flavor.

RASPBERRIES.

This fruit is very promising, and is rapidly growing in popular favor; the planting and growing of it is at present occupying much of our attention. I shall proceed to notice it in the following condensed order: Highland Hardy, Brandywine, Turner, Herstine, Naomi, Clarke, Cuthbert, Queen of the Market, Thwack, Ganargua, Saunders No. 56, Mammoth Cluster and Gregg, as the best that have come under my notice.

Highland Hardy is a widely disseminated American variety, and is said to be the earliest ripening sort, but of very poor quality. Its remarkable earliness and solid fruit make it a very desirable variety for market.

Brandywine is early and productive; much resembling Highland Hardy. It is very valuable for early market.

Turner is a recently introduced American fruit of the first promise. The plant is hardy and almost thornless, and a very strong grower;

the fruit is large, firm, and handsome, juicy, sweet and of fine quality. It is thought by growers that this sort is the most promising of all for general cultivation and market purposes.

Herstine is another exceedingly valuable variety, of foreign origin. The plant is a strong, hardy and thrifty grower, and the fruit is large, oblong, firm, and of a beautiful crimson color, and of a fine sub-acid flavor.

Naomi in quality and general character much resembles Herstine, but with us is of larger size.

Clarke is the best raspberry for family use. It is remarkably productive, and nearly hardy. The fruit is large, bright red, conical, and of a very high flavor. This variety is worthy of very extended culture for family use.

Cuthbert, with us is a real acquisition. It is one of the finest red raspberries yet introduced. The plant is hardy and exceedingly productive, and the fruit is large, conical, deep, rich crimson color, and of excellent flavor. This variety may justly be called the coming red raspberry.

Queen of the Market much resembles Cuthbert, not excepting its late ripening quality, but it is said to be hardly so good in flavor as that variety.

Thwack has slightly been tried here, but not to any great extent, but as far as we have gone it is of considerable promise. It is large and firm but not high flavored.

Ganargua.—This is the best of the purple caps in cultivation, and is worthy of far more extended cultivation. The plant is perfectly hardy, and will endure our climate and produce heavy crops of fine fruit. The fruit is of a deep purple color, large and fine flavored. It is readily propagated by the tips, and will thrive and do well in any well drained soil.

Saunders No. 55 has fruited to some extent with us this season. Many are doubtless acquainted with the origin of this new Canadian fruit, in the hands of our esteemed hybridist and brother, William Saunders, London, Ont. It is almost premature to give an opinion regarding its merits, but it is at present believed that it will not come up to the high standard of its competitor, Ganargua, which it very much resembles.

Mammoth Cluster.—Among the blackcaps this fine fruit has long

stood in very high estimation, and to-day it is exceedingly popular. Still it is regarded by some as a little tender in plant, although it stands our cold well.

Gregg.—This is a black competitor of Mammoth cluster, which it very closely resembles; but we notice some points of difference, viz: It is later in ripening, hangs longer on the bushes, is more even in size, a little higher in flavor, and we get a better price for it. These are good points.

You will perceive that there is nothing remarkably new in this list, but all the varieties named are good and worthy of general cultivation.

GOOSEBERRIES.

We had some fine discussion about this fruit last summer at our meeting in Guelph. The cultivators there have given this fine fruit considerable attention, and appear to have been eminently successful with it. But such on the whole has not been the case with us, especially where its culture has been attempted on a larger scale. In the first place we have no varieties that will keep clean from the dreaded mildew excepting the American sorts, which are all small. Secondly, the dreaded ravages of the gooseberry worm in the fruit, and the destructive saw-fly on the leaf, are more than a match for our meagre supply of patience. At present the varieties in cultivation are mostly confined to Houghton's Seedling, an American sort of great hardiness; Downing's and Smith's Seedlings are being attempted, but as yet not to any great extent.

CURRENTS.

This fine, popular and easily grown fruit is losing nothing in the estimation of our people, and may be fitly termed "The poor man's fruit," or "The fruit for the million." Though the ravages of the gooseberry saw-fly upon the leaves is still very great, yet large crops are grown and matured. There is still much carelessness displayed in the growth and management of so fine a fruit, but still it most abundantly repays every attention bestowed upon it. The varieties generally planted are not numerous, being mostly Red Dutch and Black English: and really the good sense of the people is here shown, for nothing in our experience has yet been introduced to surpass those old friends. Red Cherry, though a fine, large and handsome fruit, is

yet a poor, unprofitable bearer, as is also La Versailles. Victoria is considered too small in berry, though a good bearer. White Grape is excellent, perhaps the best white variety grown. Black Naples is good and very profitable, though so late in its ripening. Lee's Black Prolific is thought to be hardly so good as Black Naples, and as for Prince of Wales and Bang Up, we have not introduced them sufficiently to give an opinion respecting them.

SUGGESTIONS.

1.—To be successful in growing small fruits, better attention must be given to the preparation of the soil, constant cultivation while growing, provision against the effects of drought, remedies for ravages of insects, &c.

2.—Planters should be more united in their efforts at growing and marketing small fruits; they should not by any means run against one another.

3.—It would be a great assistance to the markets in every fruit growing section in case of a glut, to provide means for curing, canning and preserving fruits. This could best be done by the establishment of drying houses and canning factories, either on the independent or co-operative plan—something like our cheese factories and creameries.

4.—I would suggest that the subject of canning and preserving fruits be more thoroughly discussed at our next winter meeting, and that the results of the Association's deliberations be more widely distributed over the country.

SHEEP AND THE CODLIN MOTH.

We have strongly recommended for many years the practice of turning sheep into apple orchards to destroy the codlin moth. It is true that only a part of the fruit drops and is eaten by the sheep with the worms it contains, and the rest goes with the mature fruit into the market barrel, apple room or cellar. But the dropping apples which the sheep eat include nearly all that are infested which furnish a new brood in the orchard. In other words, what the sheep do not eat are carried off with the gathered apples. This is true to a great extent.

This remedy for the codlin moth has been thoroughly tried of late years by some of our best orchardists with great success. It is best adapted to orchards that are nearly full grown, and in which grass is permitted to grow. It may be applied to younger orchards which are cultivated, provided no crop is planted or sowed, and the sheep are sufficiently fed with grain and mowed grass, or other suitable food, for the fallen apples will

not sustain them. The practice of the best orchardists is to seed their orchards to grass when the trees are large enough to shade most of the ground. The sheep are turned in soon after the blossoming season, and as soon as the grass has a fair start, and are continued till nearly the time to gather the apples. The branches of trees which have low heads and are heavily loaded with fruit, will bend down within reach of the sheep before the end of August, and in this case they must be taken out a little sooner. Troughs for feeding them grain are made by nailing two boards together at the ends. They will eat all the grass they want, and keep the surface closely grazed. They will devour every apple that drops, from the small ones early in summer, to those nearly full-grown two months later. If they do not get enough moisture in these, they will be likely to attack the bark of the trees, unless well supplied with water. Enough for them to drink should therefore be always within reach. If the trunks of the younger trees are coated every few weeks as needed, with a mixture of whale oil soap-suds and sheep manure, the sheep will not be likely to attack the bark.

The amount of enriching which the orchard will need will depend altogether on the previous richness of the land. There are very few places, however, where a top-dressing of manure will not be useful or necessary once in two years, in any orchard seeded to grass. The droppings of the sheep will be a valuable addition—the more so as the quantity of grain or meal is increased. The number of sheep to a given number of trees varies with different owners. Some have kept in their orchards half as many sheep as the number of trees, where they have been planted remotely, and orchard grass or other feed gives them a good supply; and they are careful to make up any deficiency with other food. Others find that all the fallen apples are eaten with only one sheep to six trees. The owner must determine this question himself, by observing the amount of feed required, and the number of sheep to pick up promptly all the dropping apples. The uniform voice of those orchardists who have given this remedy a full and fair trial is, that their crops so treated are but little infested with the codling worm, and that if the remedy is faithfully applied in successive years, the fruit continues to become fairer. The trial of a single season may not effect much; the remedy must be continued unremittingly year after year.

—*Country Gentleman.*

CORRESPONDENCE.

I take pleasure in writing a few lines to let you know how we are getting along in this out-of-the-way place. We have had a very cold summer. On the 7th July the growth on all the apple, pear and cherry trees I planted in the spring was badly killed. I am informed by men that have been lumbering here for over twenty years that they have never seen a season like it before, and I am in hopes we will not see one like it again. I intend planting some more trees next spring if spared. We had plenty of strawberries, huckleberries and raspberries, but the cranberries were frozen on the 16th August,—an unusual occurrence for this district.

—W. WARNOCK, *Blind River, Muskoka.*

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THE OAKS.

Perhaps it will be interesting to the readers of our monthly to refresh their memories, and take a glance once more at the rich profusion displayed in the many varieties of this most useful tree, probably the most useful of all the trees, when we take into consideration the various purposes to which it is applied.

We are indebted to the elder Michaux for the first history of our North American oaks, who under the auspices of the French government explored the Continent from Florida to Hudson's Bay, during the years from 1785 to 1796. Subsequently the younger Michaux in 1807 visited this Continent, and traversing the country, corrected and enlarged his father's work. Mr. Nuttall arrived the same year that the younger Michaux left, and in 1834 crossed the Rocky Mountains and extended these observations to Oregon and Upper California, which were published in 1849. From these sources mainly do we derive our knowledge of the several species of American oaks.

All the oaks are monocious, that is, the flowers are unisexual, the male or pollen-bearing organs appearing in one flower, and the female or pistillate organs in another, but both flowers—those that have the stamens and those bearing the pistil—being borne upon the same tree. Usually after fructification the female blossom advances through its several stages and perfects its fruit during the same season, but in some of the oaks this is not the case. The female flower seems to remain stationary during the whole of the first summer, and develops its fruit during the second season, so that there is an interval of some eighteen months between the first appearance of the flower and the ripening of the fruit. Botanists have made this peculiarity a basis of classification, and have arranged the oaks under two divisions, those of annual fructification, and those of biennial fructification. It is claimed as a matter of observation that those species which are of

annual fructification as a rule have wood of a finer texture, more compact, and therefore more durable than those that are biennial.

We shall not attempt even a short description of all the oaks that have been found in North America, but shall be content with naming those that are among our most useful trees, and deserving of special attention from all those who desire to make plantations of trees that will be valuable in coming years.

WHITE OAK, *quercus alba*. This is probably the most valuable of all, and bears a striking similarity to the European White Oak, *quercus sedunculata*. It will attain under favorable conditions to the height of eighty feet, with a diameter of from six to seven feet; but it varies very much in size according to soil and climate. The leaves of this species are regularly divided into oblong lobes, rounded at the extremity, not pointed. When young they are reddish above and white and downy beneath, and when full grown they are smooth, the color light green on the upper surface and glaucous underneath. In the autumn the leaves change to a bright violet. The acorns are oval, large and sweet, set in rough, shallow, grayish cups, and borne either singly or in pairs. This species belongs to the division of annual fructification, hence the acorns will always be found upon the shoots of the current season. The wood is reddish, and similar to that of the European, and is used for building-frames, mill-dams, posts, frames of coaches, baskets, barrels, and ship-building. Mr. Nuttall says that the roots of this species make beautiful furniture, and that a cabinet and table made from the forked branches, which was then in the possession of Mr. C. J. Wister, in Germantown, near Philadelphia, would vie with the finest known woods, being feathered in the most beautiful manner, and taking a polish equal to that of the finest mahogany.

ROCK CHESTNUT OAK, *quercus pinus monticola*. This species delights in strong soils in abrupt and untillable exposures, and on that account is well adapted for clothing broken hill-sides, and rocky or stony soils. It is found growing on the steep, rocky banks of the Hudson River, and on the shores of Lake Champlain, and yet more abundantly on the Alleghany Mountains in Pennsylvania.

The tree presents a beautiful appearance, being symmetrical in form and luxuriant in foliage. The leaves are five inches long and three broad, oval in form and regularly toothed. When they first open they are covered with a thick down, but when fully expanded are perfectly

smooth. The acorns are brown, oblong-oval, set one-third of their length in a spreading cup covered with loose scales. The bark is used in tanning; the wood is reddish, like that of the White Oak; is used in ship-building, and for fuel is esteemed next to the hickory, and is the best of all our oaks for this purpose. It is one of the annual fructification species.

RED OAK, *quercus rubra*. This species belongs to the biennial section, and is found as far north as the Saskatchewan, and is one of the most common in Canada. It is a tall, wide-spreading tree, often attaining a height of eighty feet, with a diameter of from three to four feet. The leaves are smooth, shining on both sides, large, deeply lacinated, and rounded at the base. In autumn they change to a dull red, afterwards becoming yellow as they fall. The acorns are large, contained in flat cups covered with narrow scales. The wood is reddish, coarse grained, strong, but not durable, and is principally used for staves. The bark is used in tanning, but is not as highly esteemed as that of the Rock Chestnut and Black Oak.

BLACK OAK, *quercus tinctoria*. This species is not only widely distributed, but is very abundant. It is one of our loftiest trees, rising to the height of eighty or ninety feet, and measuring four or five feet in diameter. The leaves are large, deeply lacinated, and divided into four or five lobes. The leaves of the young trees change in autumn to a dull red, while those of the old trees become yellow. The trunk is covered with a deeply furrowed bark, which is black or very dark brown, whence it probably derives its name of Black Oak. The wood is reddish and coarse grained, and is used largely for staves, or as a substitute for white oak for other purposes. From the cellular tissue of this oak is obtained the material known as *quercitron*, used in dyeing wool, silk and paper hangings. This is probably the most valuable of those oaks which belong to the section of biennial fructification, and only second to the white oak.

SWINDLING TREE AGENTS.

BY D. B. HOOVER, ALMIRA.

Several years ago we were greatly pestered in this section with a lot of swindling tree agents. They roamed through the country pulling the wool over the eyes of a good many young farmers, who had about

that time taken up the idea that the growing of fruit would be profitable if good kinds were procured. This gave the agents an opportunity for selling anything for which a grand name could be furnished—a thing that they were not slow to observe and profit by. Anything asked for would at once be placed on the order book, whether they had it in stock or not. Then they invariably had some novelty to exhibit, that “surpasses anything heretofore offered.” One agent took orders for what he termed the Mammoth California Pear, at \$2.00 per tree, but when the trees he furnished us came into bearing they proved to be the Duchesse d’Angouleme, worth about 50 cts. Many other instances of fraud perpetrated by these agents might be recalled, but the above will serve as a fair sample.

Although all tree agents are not alike unreliable, still, as a rule, would it not be much better for us to stop dealing with agents altogether? When we require anything in the nursery line, let us place our orders direct with some well-known and reliable nurseryman, so that we may be assured that we get just what we order, and nothing else. This would ultimately do away with agents entirely, consequently the nurserymen, by saving their salary or commission, would be enabled to furnish stock at cheaper rates.

ORNAMENTAL TREES.

At a meeting of the New York Rural Club, Mr. Josiah Hoopes, president of the Pennsylvania Horticultural Society, read a lengthy and excellent paper on ornamental tree planting, from which the following brief extracts are taken. The Editor of the CANADIAN HORTICULTURIST commends them most earnestly to the careful perusal of every gentleman who plants ornamental trees. It will be necessary to modify these very valuable suggestions sometimes so that they will harmonise with the climate at the place where the planting is to be done. In that part of Ontario lying between the great lakes, Erie and Ontario, and along the shore of Lake Erie up to the line of the Great Western Railway, within the limits of successful peach culture, the trees and shrubs mentioned by Mr. Hoopes will be generally found to thrive well, but to the northward, in limits where the peach will not thrive, we can hardly expect the Aucuba or the Japanese Euonymus will flourish; nor can the Magnolias be relied upon. Some of the

more hardy species are being tried in the Arboretum at the Ontario School of Agriculture, Guelph, but a few years must elapse before any report upon their ability to endure the climate can be made. The same remarks may also be made concerning the Cypress, both deciduous and weeping. The hardiness of the new evergreens mentioned by Mr. Hoopes is not yet established in our climate. The Balsam Fir, Norway Spruce, Austrian, Scotch and White Pines have been fully proven, and can be relied upon everywhere. The beautiful Lawson Cypress is not hardy enough for the climate of the County of Lincoln, but we may hope that the Nootka Sound Cypress, *C. Nutkaensis*, will prove hardy. But the greater part of the plants named by him are hardy, and where they are not, there are species of the same genus in almost every case, well suited to our climate. With a little attention to the subject, as suggested by Mr. Hoopes, the autumn tints might be made a most pleasing feature of our lawns. Will not our readers plant a group or two of these trees and shrubs in their lawns, and show their neighbors what a beautiful autumn picture can be made. Mr. Hoopes says:—

I invariably commence with a stereotyped phrase, "Don't plant large trees in small yards." One of the greatest of all errors, and one that is indulged in by so many of our planters in their horticultural infancy, is that of setting out a first-class tree in a second-class yard. Scarcely a town lot or cemetery enclosure is laid out but this mistake is made, although ignorance in nearly every instance is the excuse, and justly so, too. Taking, for instance the laborer's cottage, with its few square feet of grass in front,—and, by the way, what is more attractive than a well kept sod?—in the place of a Norway spruce or Austrian pine, I would suggest what is termed a dwarf evergreen—one of the smaller forms of *arbor vitæ*, now becoming so popular, or a juniper, with its variety of outline, or perhaps a form of the newer genus *Retinispora*. If the front should have a northern aspect, the best plant for this purpose is either some handsomely variegated variety of *Aucuba* or *Euonymus Japonica*. The newer introductions of these are exceedingly attractive, and a group composed of distinct kinds forms an agreeable feature. To those whose taste for flowers is predominant, I would recommend a circular bed of roses, not planted promiscuously, but in lines or ribbons, each circle a distinct color, all trimmed low, and consequently well branched. If the entire bed

should be of one variety, the effect will also be very fine. For this purpose the China or Bengal class cannot be excelled.

As I am not here to-night to give you a lesson upon landscape gardening, even had I the ability so to do, I shall simply call your attention to a few of the most desirable trees for what might be termed second-class places. For a group of low-growing trees, commend to me always certain species of the Magnolia. The *M. conspicua*, with pure white bloom; *M. soulangeana*, with its white flower, striped and shaded with purple; *M. cordata*, with golden yellow, odorous bloom; and lastly, but very far from least, the beautiful *M. Thompsoniana*, with creamy white fragrant flowers. We have here a group of four trees that cannot be excelled—hardy, beautiful—in foliage and flower, and so entirely free from injurious insects that they seem to combine all the excellencies one could desire.

Another pretty group of small-sized trees may be composed of the *Halesia tetraptera*, (or Silver Bell,) *Laburnum*, (or Golden Chain,) and the *Cercis Canadensis*, (Red Bud or Judas tree.) Still another group of the same size can be formed of the *Prunus Padus*, (or European Bird Cherry,) *Rhus cotinus*, (or Purple Mist,) *Chionanthus Virginica*, (or White Wood or Virgilia.)

In a corner of the grounds a closely massed group of the different colored double flowering peaches will be very pleasing when in bloom, and where they will succeed, nothing can excel the numerous varieties of thorns. In the centre of the peaches I would insert a tree of Reid's weeping variety, a graceful drooping tree, and among the thorns plant the weeping variety of it. These have a tendency to remove a certain uniformity of outline prevalent in all such masses.

As we leave the small class of trees and advance to those of larger growth, I unhesitatingly place in the front rank, if not at the very head, the Norway Maple. Seldom do we find its equal in all that pertains to a specimen tree. With ample foliage of the richest shade of green, globular in form, perfectly hardy and healthy in almost every situation, it appears peculiarly adapted to stand alone upon a beautiful lawn. Another, although of a widely different character, is the White Birch, (*Betula alba*), and its delicate cut-leaved variety. The silver-leaved Linden succeeds well everywhere, and is undeniably a beautiful specimen tree, as well as the English cork-barked maple, when branched to the ground. Although of large size, the Sweet Gum, (Liquid amber)

forms one of the most available ornamental trees. Beautiful at all seasons, with its curious corky bark, rich, glossy star-shaped leaves and picturesque form, it is well adapted for creating marked effects; and then in the autumn its brilliant crimson hue is remarkably attractive. Either for grouping or as single specimens, the genus *Fagus* or Beech supplies us with a charming set of trees. Among the most striking in character I would place the fern-leaved and purple-leaved as especially fine. The cut-leaved Alder and the newer variety *asplenifolia* I consider very desirable for particular localities.

There are very many other trees of beautiful form that are unfortunately not adapted for general planting. In the neighborhood of Philadelphia we cannot use the elms, because the leaves are often perforated by insects; nor the ash, on account of the borers; the mountain ash meets with the same fate, and the thorns are destroyed by a fungus; the horse chestnuts become disfigured by midsummer, and so we have to rely on other trees. But where this list will succeed, as they evidently do in central New York, my advice is to use them all freely. There are four genera belonging to the great natural order *Coniferae*, that are furnished with deciduous leaves and tall spiral tops, all well adapted for the centre or background of groups—the Larch family, of which the European species is preferable; the *Salisburia*, or Japan Ginko, with curious yet pretty fan-shaped foliage; the *Deciduous Cypress*, with light feathery leaves; and the *Glyptostrobus*, or Weeping Cypress, having unusually graceful foliage and pendent branchlets. Every place should have at least one drooping tree, as much for its intrinsic beauty as for the effect it produces when grown near other forms. For this purpose the Weeping Beech possesses an individuality peculiarly its own. Not so pretentious perhaps as the preceding, but with a graceful drooping of the more slender branches, the Weeping Linden stands next in the list. Where they will flourish, the Weeping Elms and Weeping Mountain Ash are very handsome; and the old fashioned Weeping Willow, especially when in the vicinity of water, is often a valuable assistant for creating a beautiful picture.

For small-sized weepers I would suggest the following, all of which are useful, and in fact indispensable to the landscape gardener: The thorn, grandidentata poplar, Kilmarnock willow, dwarf cherry, sophora and beech. The drooping varieties of the common ash are stiff and

formal in outline, yet often attractive from their very oddity. A feature very often overlooked in American gardens is the massing of trees that are beautiful in the autumn. Most places can be improved by a little group of these brightly-tinted species, and for this purpose I would name for the back-ground the scarlet oak (*Quercus coccinea*), dazzling in its scarlet dress; the sour gum (*Nyssa Multiflora*), with the deepest shade of crimson; the red maple (*Acer rubrum*), gay with yellow, red and orange, and a sassafras (*S. officinale*), with golden yellow leaves. To the front I would place a white flowering dogwood (*Cornus Florida*), with its vivid shade of red; one or two common sumacs (*Rhus glabra*), as bright as the petals of a crimson peony, with a few vines of the green brier (*Smilax rotundifolia*), of golden hue, and *ampelopsis quinquefolia*, dyed with crimson, clambering over the whole. It is needless to add that the effect of such a blending of colors cannot be overrated. In leaving the deciduous trees, I would merely call your attention to the neglected family of oaks, although beyond the limits of such places as we are discussing to-night. For very large lawns no genus in the flora of the world can exceed their majesty of form, their picturesqueness of outline, nor their value for every purpose appertaining to the landscape art.

We now arrive at the Evergreens, but as my time has nearly expired, I will hurriedly particularize a few of the most valuable for the majority of our country places, all of which will undoubtedly succeed in this vicinity. In the spruce family, as not only the first in the genus, but among all cone-bearing trees, the Norway Spruce is fully intitled to consideration before any other. You all know it well, and knowing it have nothing to say against it. It is a tree at once appropriate in all situations and for every purpose; hardy everywhere, and exceptionally beautiful.

More formal in outline, but remarkably pleasing in color; the white spruce stands next, and the hemlock, with its charming drooping branches, curving in even circles to the ground, must never be neglected. In particular localities and exposures, the *Abies Smithiana*, *A. Douglasii*, and *A. Menziesii* are among our handsome kinds. In silver firs, the *A. Nordmanniana* is without doubt the best hardy species known to us at present—always beautiful and healthy, we cannot well dispense with its presence. Almost as valuable, the *A. Pichta* ranks next. With varying success, although generally firm,

I would name the rare *A. amabilis*, *A. grandis*, *A. nobilis*, and *A. Cephalonica*, while common balsam fir and European silver fir are unexceptionable in many grounds. The pines must be used sparingly, as they are rather coarse for close proximity to the dwelling. Among well-tested kinds, the Austrian, Cembrian, White, Lambert's, and Scotch are all hardy and deservedly admired, and where the *P. excelsa* is free from blight, I would add it to the list. A few of the newer species, such as *P. ponderosa* and *P. Massoniana* are promising to be valuable, but they require a more extended trial. The Cedar of Lebanon must not be forgotten, not alone for the many reminiscences connected with it by the sacred writers, but for its individual beauty on the lawn. The *Libocedrus decurrens*, *Cupressus Lawsoniana*, and *C. Nutkaensis*, notwithstanding they are almost unknown to cultivators, are surpassing our most sanguine expectations where they have been tested. Our American *Arbor Vitæ*, as well as the Siberian variety, are so well known and appreciated that it seems unnecessary to urge their claim to public notice. Low-growing conifers are of such vast importance to the landscape gardener in creating dense evergreen masses, that of later years our arboriculturists have been eagerly gathering from every available source, all which have proven distinct.

PLANTS TO BE DISTRIBUTED AS PREMIUMS IN SPRING OF 1882.

The Directors have decided to give the members the privilege of selecting from the following articles that one which they prefer to have sent them next spring; namely, 1st, a plant of the *Spirea prunifolia*, or, 2nd, a plant of Lee's Prolific Black Currant, or, 3rd, three bulbs of the *Gladiolus*, or, 4th, a Moore's Early grape-vine. The members, when they send in their annual membership fee, will please signify to the Secretary which of the four is their choice.

The *Spirea prunifolia* is one of our most handsome flowering shrubs. It is remarkably free from insects, healthy and hardy, never becoming very large, and easily kept in any desired form. The leaves in summer are a rich glossy green, but in autumn they change to various tints of crimson and scarlet, making a very attractive and pleasing object on the lawn. In early spring, before the leaves are expanded,

the branches are literally wreathed with white double flowers, most perfect in form, and beautiful in their whiteness. Any of our members desiring an elegantly neat flowering shrub for the lawn cannot fail to be pleased with this.

Lee's Prolific Currant is one of the best, if not the best, of all the black currants. The currants are large in size, and borne in profuse clusters of the usual form.

Three *Gladiolus*. These are strictly flowering corms, though usually called bulbs. They are very showy late flowering plants, the flowers being prettily shaded with crimson, or pink, or carmine; these are borne on long spikes, those nearest the base opening first, progressing upwards until all are expanded. The spikes of bloom are much used for table decoration, because they can be cut when the blooms at the base have expanded, and put in water in the house where the remaining flowers will gradually open until all have bloomed. The corms should be kept in a cool place free from frost during winter, and not planted in the garden until danger from frosts has passed; then they may be planted in the open border, where they should remain until frosty weather in the fall admonishes us to take them up, and store them away for the winter. They can be kept where potatoes are stored, or any cool place where it does not freeze. Three of these corms will be sent to any one choosing the *Gladiolus*.

Moore's Early Grape. This is the best very early black grape. In size of bunch and berry it resembles the Concord, and is much like it in flavor. Of all the many varieties fruiting in the Editor's grounds this is the first to ripen, and is much better than Champion or Hartford Prolific. The vine is remarkably healthy and hardy, with tough leathery foliage, ripening its wood very early in the season, which qualities make it remarkably well suited to our climate. It is a variety well worthy of trial, especially by the members who reside in those parts of the Province where the summers are short, and the season not long enough to ripen the Concord fully every year. They will find it a most desirable acquisition.

Each member will receive the article chosen by him through the mail, securely packed in damp moss and wrapped in oiled paper. The Directors have found that this is the only way in which plants can be distributed with certainty and dispatch.

CORRESPONDENCE.

ROTTING OF TOMATOES.

Will you or some of your correspondents inform the readers of the *HORTICULTURIST* what caused the rot in tomatoes this year and last. In this section more than half the crop was thus destroyed. Is it caused by insects, or is it atmospheric? I see by the papers that the disease, or whatever it may be called, is not an endemic, but an epidemic, extending over a large area in Ontario. It has proved the most destructive where planted on rich land. Before the fruit has attained its full size it begins at the flower end with a black spot, a kind of gangrene, and spreads very rapidly, making the fruit useless.

Can a peach tree be successfully grown by grafting on a plum stock? Will it be as hardy, and stand the winter's frost, and bear fruit, or will it be sterile? Hoping to see an answer to these queries in your next issue,
I am, dear sir, yours, &c. THOS. COATES.

The peach is often budded on plum stocks, and is fully as hardy and productive as when grown on the peach stock. The Editor has not any experience in the rotting of tomatoes. Can any of our readers answer?

DEAR SIR:—I send herewith one dollar to renew my subscription. I consider the *HORTICULTURIST* well worth the money, and look out for it every month with great interest. Saunders' Hybrid Raspberry did well. It made five or six canes of about five feet each in length. I use a liquid manure prepared from the parings of horses' hoofs steeped in water for a week before using. When the liquid is drained off add more water. In this way a bushel of parings to a barrel of water will produce an abundance of manure for vines, small fruits and plants for six months. I used it with good success. This manure is excellent for plants in pots, but is objectionable on account of the smell it produces in a house. I think that a solution of copperas sparingly used would cure the smell; and I learn that fuchsias are very fond of copperas.—JAMES STEPHEN, *Toronto*.

The Downing gooseberry and Salem grape both did well with me. The Swayze Pomm eGrise apple tree was as dry as an old stick when received; couldn't bring life into it. Flemish Beauty pear did well. The Glass Seedling Plum I did not get until the plum blossoms had all fallen off my trees. It was well packed, and several shoots had made a growth of three or four inches long, the shoots quite white. I nursed it very carefully, but it did not do well. Had it planted in a nursery row with others, and the deep snow of '78 and '79 broke it off close to the ground, so that was the last of it. The Diadem Raspberry did pretty well, but in moving from the town to my farm it got lost by some means. The strawberries were not of much account. The Burnet grape did well. The Ontario apple was a splendid tree, received in good condition, and has made great growth. Saunders' raspberries did very well, especially No. 50.—WALTER HICK, *Goderich*.

I am glad to find that the Directors have decided to distribute among the members a grape vine. My garden being of very limited dimensions, I have to make the most of it. I should therefore prefer a vine for 1882, and if allowed a choice, would like to try a plant of the Niagara grape, or failing that, one of the Prentiss. The CANADIAN HORTICULTURIST has been a source of profit and pleasure to me, and I sincerely hope the Directors will continue its publication. As regards the trees, &c., received from the Association, I have to report that Glass' Seedling Plum bore a sprinkling of nice, handsome fruit, after the style of the Orleans, but darker in color. My crop of fruit was very much lessened by the loss of nearly all the fruit buds, pecked out by the sparrows in the early part of the year. I hope to circumvent master impudence next season, by coating the buds with a composition distasteful to the birds, whilst beneficial to the tree. I cannot say much for the Diadem raspberry. It is very hardy and vigorous, but the fruit on my soil (stiff clay) is small and ill shaped; quite the reverse to the strawberry Arnold's Pride, No. 23. I can speak in the highest terms of this berry, which I find very productive, vigorous, of good flavor and perfectly hardy, many of the plants having been left uncovered during the last winter and came out in the spring uninjured. The Burnet grape produced a crop of between thirty and forty bunches of very nice fruit. I find the vine quite hardy, remaining uncovered during the winter. I nearly lost this vine when first received from the nurseries. For over a month it made no progress, and was evidently dying. Fancying something was wrong at the roots I dug it up and carefully washed the roots in warm soap-suds, then replanted, and daily sponged the stem, &c., until I had the pleasure of seeing my trouble rewarded by its breaking into bud from just beneath the soil. Since then it has made shoots twelve feet long, well set with fine prominent fruit buds. I had a similar trouble with the Ontario apple tree, which when received appeared dried up almost to a stick. I placed it in a barrel of rain water for a day, then after taking off two scions, (both of which I grafted and they grew,) I planted, and every evening washed the stem and branches with sun-warmed water. It grew and is now a promising tree, with several well-developed fruit spurs. So you see, Mr. Editor, that with a little care and trouble I had the satisfaction of saving both plants. Whereas, had I treated them as most of my neighbors do, by simply digging a hole and thrusting in the roots, and then leaving them to take care of themselves, I should very likely have lost both.—WM. J. MANSELL.

The strawberry plants were all killed off the first winter. The raspberries have done very well, the fruit being firm and pleasant, and the canes perfectly hardy, standing all winter without any protection. The Ontario apple promises to make a fine tree. I am cutting the head well back, keeping it low, as it is planted on a high piece of ground, and is exposed to every wind that blows. I leave the Burnet grape vine to the last, and will try to give it its just due. I consider it one of the best out-door grapes yet introduced. It is perfectly hardy, as it is left tied upon the trellis all winter without any protection. It is a strong, vigorous grower, giving as much labor to keep it pinched back as Rogers No. 15, which is planted

alongside. It is a very prolific bearer, all the bearing parts of the canes being covered with fine bunches of large oblong berries, the flavor of which is A 1. Sharp, sweet, and spicy ; far ahead of the other standard varieties I have. Some practical men who have tasted it, say it is equal to the Black Hamburg, which I believe is one of its parents. It is a fine keeper ; at Christmas the bunches were as plump and fresh as when cut from the vines, and the flavor as good as when fresh. The first year it bore fruit it was ripe a week or ten days before the Concord ; this year it ripened with the Concord, being very much troubled with the thrip, which no doubt retarded its ripening. It reflects credit on the Association for introducing it, and on Mr. Dempsey as the originator. My soil is heavy clay, underdrained, and owing to the exposed situation I trim and trellis my vines low, keeping them well pruned back.—THOS. HEDLEY.

REPORT ON BURNET GRAPE.

The Burnet grape vine I received from the Association has grown very strong. It bore twelve large bunches of good flavored fruit this season. Soil, heavy clay ; southern aspect, against concrete wall.

—W. WISE, *Clinton*.

BURNET GRAPE.

The Burnet Grape had several fine bunches of grapes on it last year. It fruits nicely down here, and stands the weather well.

D. V. BEACOCK, *Brockville*.

Last year was a terror here. All my plum and peach trees are dead, and about 1,000 pear trees are gone, and the rest are sickly looking. Apple trees are also dying, especially R. I. Greening. I lost about 2,000 trees, 8, 9, 10, 11, and 12 years old.—W. McKENZIE ROSS, *Chatham*.

Antioch College, Yellowsprings, Ohio.

Will you allow me to make a few remarks on Mr. Saunders' paper. In speaking of the codlin moth, (*Carpocapsa pomonella*), he says that no one to his knowledge has ever taken it at sugar. Now it is a little singular that this year, when the codlin moth is much scarcer than usual, two specimens out of the three that I have seen were caught at sugar in a dish hung on my apple tree. I am inclined to attribute the scarcity of the insect this year to our cold winter and the continuance of snow on the ground, which has driven the woodpecker to search more closely for food. The second point I wish to notice is probably an effect of climate, but here the egg of the moth is not laid until some time after the blossom of the apple is over. My trees were in full flower during the first week in May. I took the first codlin moth on June 2nd, and then on June 13th. On this latter day I saw the first signs of their presence in the fruit. Careful search had previously failed to detect them. Then nearly six weeks passed between the fall of the blossom and the hatching of the caterpillar.

E. W. CLAYPOLE.

REPORT ON FRUITS.

I have two Wagener apple trees, which I planted on clay soil twenty four years ago; but they do not grow as fast as some other kinds. They are good trees to bear, however; the fruit is of fair size, keeping till May. I think they are one of the best varieties of winter apples we have. Grimes' Golden Pippin is growing well; the fruit is of good size and superior flavor. They are ripe in November; a good many fall off before they are fully ripe. They are not likely to be very valuable in this section.

My Burnet grape bore a few small bunches last summer. The berries are not as large as the Concord, and did not ripen any earlier.

SANDFORD WHITE, *Tilsonburg*.

CHOICE SHRUBS.

THE MOONSEED.—Few realize the attractions of the Moonseed, *Menispermum canadense*, but why I cannot say. It is hardy and should be well known, for it is an old plant of excellent qualities. The way in which the vigorous, broad, heart-shaped leaves fold closely over each other is very curious as well as ornamental. It is, moreover, a very strong grower, easily propagated, and therefore cheap. It is, however, only another instance of a good old plant apparently doomed to neglect.

THE CUT-LEAVED SUMACH.—The changing colors of autumn again remind us of the peculiar attractions of the cut-leaved sumach (*Rhus glabra laciniata*). Many roadsides glow at this season with the common sumach, but the same deep color on the cut-leaved variety is combined with the most delicate and lace-like divisions of the leaf. The very irregularity of the sumach has such special charms that pruning fails to improve even the cut-leaved variety, unless it be to curtail the dimensions of some overgrown specimen. All the sumachs—*R. glabra laciniata*, as well as the beautiful new Chinese *R. osbecki*—belong to the outskirts or points of large shrub groups, where their peculiar form and coloring may be fully evident. Color and irregular form alike make them prominent in such positions. If it is desirable to form them into masses—and it is often very desirable—they should be planted entirely by themselves on some hillside or slope. The way they are gathered together in their favorite haunts suggests the proper manner of arranging them. It is a mistake, however, to think that any soil will suit the different varieties of sumach simply because when wild they grow freely and abundantly. They like good, loamy soil, and certainly in all ways deserve to have their likings considered, for as lawn plants in the fall of the year few shrubs excel them.—S. PARSONS, in *Country Gent*.

A FEW WORDS ABOUT THE CLEMATIS.

It is hardly fair to give so lovely a plant as the Clematis a mere passing mention. The tender, faint, silvery white of *C. Lucy Lemoine*, the broad gleaming white of *C. Gloire de St. Julien* and *Henryii*, and the rich royal purple of *C. Thomas Moore*, *Prince of Wales*, *patens* or *azurea*, and *Jackmanni*, the latter almost the best of all, come to us as a surprise; almost a miracle as we first behold their tender petals resting on masses of shining

leaves. But I want to note two or three important points in their culture, whereby increased and prolonged pleasure may be derived from their peculiar beauty. Clematises, as a rule, grow thick and low, when compared with other climbers. They should, therefore, be trained either to coarse wire netting, set against wall or house, or on a pole or dead tree with parts of the branches left unlopped. Thus managed, clematises display effectively their rich colors and delicate grace. Single wires or strings fastened vertically are frequently used as supports for clematis vines, but such a system of training fails to display satisfactorily the peculiar beauty of the leaves.

But some one may say that clematises, with all their surprising beauty, are very unsatisfactory because they last so short a time. The answer to this is—cut off your clematises just below the flowers, as soon as they have faded, and you will find to your delight that in August and September all kinds in any way related to those mentioned above will bloom freely a second time. Do not forget, farthermore, the species *C. virginica*, small, white and sweet-scented. It is not related to the above list, but is induced to bloom in a like manner a second time by similar pruning. People are becoming very enthusiastic about clematises now-a-days, but they have yet to learn half the attractive ways by which their charms may be displayed. For instance, they may be trained into a thick carpet, sprinkled with flowers, or in the form of a border. They may be made to cluster deliciously in the upper curves of a gothic doorway or window, or they may be allowed to wander in wild graceful abandon over heaps of rocks or roots; indeed, I can never fancy the distinctly formal mounds, columns and what-not of clematis that the books recommend in their latest devised systems of training. Very useful clematises for creeping over rocks and roots are the species *C. apafolia* and *C. grahamii*, one yellow, the other white, and both possessed of the habit—almost peculiar to themselves—of blooming in August in the most profuse fashion, and therefore needing no summer pruning. These clematises grow very rapidly and thickly, and are in every way unsurpassed for covering rock-work with foliage and flowers.

A rare and most curious clematis has come recently into the hands of the planter under the name of *Clematis coccinea*. The flower is unlike the ordinary form of clematis, and it is not only curious, but very beautiful. It consists of a solid, fleshy mass less than two inches long, moulded into the similitude of a diminutive antique vase with a very small mouth. The color is deep scarlet, which flushes the entire surface of the flower, while the foliage is much like that of an ordinary clematis. It blooms commonly in July. Altogether it is one of the most interesting plants I have seen in a long time, even setting aside its unquestionable rarity. Surely I am doing no plant injustice when I express regret that such gems of hardy nature receive so little attention compared with that bestowed on the different forms of coleus and geranium. Furthermore, in thus speaking of clematis coccinea, I would offer the same plea for all clematises. They are in many instances difficult to propagate, but always choice and lovely, and very frequently rare.—S. PARSONS, Jr., in *Country Gentleman*.

SELECT FUCHSIAS.

Fuchsias are among the prettiest of our soft wooded, free-blooming plants. They are of the easiest culture, requiring during the summer a partially shaded position, with moderately enriched soil and plenty of water during their season of growth. Some of the varieties are also well adapted for bedding purposes. Such varieties as possess good habit and good vigorous growth, and also free blooming qualities, are the most suitable for this purpose. I give below the best of a large collection, including all the newer kinds recently introduced :

Avalanche (Smiths).—Of a straggling growth, the flowers are of the largest size, double, corolla white.

Avalanche (Henderson's).—The habit of this variety is neat and compact, although a strong grower; the foliage is of light yellow, the flowers very large, the sepals crimson, corolla purple. In the western cities this kind is grown more extensively for retailing than is any other. Its habit of blooming when quite small makes it suitable for this purpose. It is without doubt the best dark double fuchsia, all qualities considered, in cultivation.

Black Prince.—A distinct variety; tubes and sepals a waxy carmine; pale pink corolla, margined with rose.

Elm City.—An old double fuchsia of good habit; tube and sepals bright scarlet; corolla crimson.

Queen of Whites.—Tube and sepals bright red; pure white single corolla; good habit.

Lord Byron.—One of the finest dark single fuchsias of recent introduction, having a fine branching habit, blooming when quite small; tube and sepals bright crimson; corolla large, open; of the darkest purple, almost black.

Mrs. H. Cannell.—Considerable excitement has been manifested among horticulturists on both sides of the Atlantic regarding the merits of this fuchsia. It is undoubtedly one of the finest double white varieties yet introduced. The flowers are of large size, and are produced in great abundance on well-shaped plants.

Sunray.—Some plants of this fuchsia in our greenhouses just now have leaves of the finest markings, and of the richest colors, equalling the finest tricolor geraniums, and not much inferior to the fine-leaved caladiums. The flowers have scarlet sepals with purple corollas.

Warrior Queen.—A good single, crimson sepals, corolla violet.

The following are the best winter-blooming kinds :—

Speciosa.—Sepals flesh-colored; corolla scarlet.

Mrs. Marshall.—Pure white tube and sepals; rosy-pink corolla.

Bianca marginata.—The sepals of this one are white, corolla crimson.

Earl of Beaconsfield.—Of recent introduction, but an excellent one for winter blooming. The blooms are often over three inches long, the tube and sepals a light rosy carmine, corolla a deeper carmine. A splendid flower for keeping a long time after being cut, being of fine substance. The double-flowering kinds are not very suitable for winter blooming, but can be had to bloom early in the spring by propagating early in the fall, and growing on slowly during winter.—M. MILTON, in *Country Gentleman*.

The Canadian Horticulturist.

VOL. IV.]

DECEMBER, 1881.

[No. 12.]

THE POCKLINGTON GRAPE.

So very various have been the opinions expressed with regard to this grape, that until now the writer confesses to considerable perplexity with regard to its qualities, having heretofore only seen it as it was exhibited some years ago at the meeting of the Am. Pomological Society in Rochester, N.Y. At that time the fruit was not fully ripe, so that no just judgment could be formed concerning it; and the impression left on the mind would not be the most favorable, for exhibitors are not in the habit of presenting a new thing to the public in an imperfect condition. It was with much satisfaction that we embraced an opportunity of visiting the grounds of Mr. John Charlton, in Rochester, N. Y., about the middle (14th) of October, where there are a number of vines of the Pocklington, and which at that time were well filled with fruit. This visit gave us an opportunity of observing the condition of the foliage, the bearing habit of the vines, and the quality of the fruit, as it appeared not upon one vine merely, but upon some twenty vines or more.

As to the foliage and general appearance of the vines, there was evidence of strong, robust constitution; a thick and leathery leaf that would endure well the trying changes of temperature, of drouth, and moisture, to which vegetation in our climate is so subject; a strong cane, not as stout as that of the Brighton of the same age, but vigorous, well ripened, and of sufficient length to indicate that the vine is a strong, healthy grower, and at the same time not so long jointed as to need great breadth of space for favorable results. The crop of fruit was abundant, quite enough one would say for the vines, though Mr. Charlton stated that a considerable quantity had been already cut off, so there is no reason to fear that the vine is not abundantly productive.

The fruit is showy, commanding attention by reason of the large size of the berries and good size of bunch, and when fully ripe is of a

light yellow color in the berries exposed to the light, changing to a greenish shade on the other parts of the cluster. The attractive appearance of the fruit will doubtless give it a prominent position as a market variety. In flavor it compares favorably with other varieties which show the characteristics of the *Labrusca* family; it is sweet, rich, and possessing the peculiar musky, or, as it is sometimes called, "foxy" flavor, which marks the Hartford Prolific, Diana, and to some extent is also present in the Concord. The berries were hanging well to the cluster on the vines, giving no evidence there of any tendency to drop from the bunch when ripe, like the Hartford Prolific.

The colored lithograph which embellishes this number, is presented to our readers by Messrs. Morris, Stone & Wellington, who have done so much in the way of introducing this grape to Canadian fruit growers. In size, both of bunch and berry, it is a good representation of the fruit, and the color is probably as accurate as can well be produced in chromo-lithography. We did not see any bunches where the berries were as uniformly yellow as in the plate, more or less of them having a greenish tint on the shaded side. It is probable that in the colder parts of the Province that tint will be found to predominate even when the grape is ripe.

We look upon this grape as worthy of trial in all those sections at least where the Concord will ripen. To those who are fond of the musky flavor of our *Labrusca* grapes, combined with much sweetness, large size, and showy appearance, this variety will be a welcome addition.

ANOTHER SEEDLING GRAPE.

We received from Mr. C. H. Biggar, of Drummondville, samples of a new seedling grape raised by him—parentage unknown. The grapes were received about the middle of October, and as stated in the letter accompanying them, were over-ripe. In size they were a little larger than the Delaware, and deeper in color, but in many respects resembling the Delaware in appearance. We were favorably impressed with the quality of this grape, and hope that we may see it again another season when in its best condition. Mr. Biggar states that it was in its prime about the 24th September, and that the vine gives promise of being a very heavy cropper.

GRAPE GROWING IN THE OTTAWA VALLEY.

BY P. E. BUCKE, OTTAWA.

The vine industry, which had no existence in this country twenty years ago, and has now taken such a hold on our brethren of Western Ontario, has only within quite a recent period extended itself so far east as this locality. It was confidently believed for a long time that if many kinds of the apple would not successfully flourish here, it was useless attempting this more tropical production of one of nature's choicest gifts. The fact was either lost sight of, or else not understood, that whilst the peach, the plum, the pear, and the apple grew on trees with stiff stems, the grape was produced on a pliant limber vine, and that this makes all the difference in the cultivation of the one and the other. It is found that the sun heat of the Ottawa valley during the summer months is quite equal, if not superior, to the more western peninsula; and that by securing a southern exposure there is not the slightest difficulty in ripening not only the ordinary hybrid outdoor varieties of grapes, but also some of those native to France, Spain and Italy, and even others which it has hitherto been thought would only ripen with favorable circumstances under glass. One of the secrets of vine growing in localities where seasons are rather short, is the securing of the vine from severe weather during winter, and the keeping of the sap vessels from freezing and thawing during spring by protecting the plants with a few inches of soil before the ground closes up in autumn, which covering should not be removed until the spring is fairly open; the early maturity of the vine-wood, which ripens with its fruits, and the season at which it begins to put forth its leaves in the spring, gives the cultivator every opportunity to treat the vine successfully in these respects.

The vine is one of the most docile of plants—it can be trained and pruned in any direction; it may be grown tied to a stake or spread out like a fan, care being taken that all the main pruning be done in the autumn. No cutting of any kind must be attempted in the spring, before the first leaves are open, with the exception of rubbing off the duplicate buds which burst along the previous year's growth. Summer pinching and pruning may be freely indulged in, and neither too much wood or too heavy a crop should be allowed to remain on the

plant, as a redundancy of either has a tendency to delay the ripening of the fruit, which it is necessary to mature as soon as possible, so as to escape the early frosts, which are injurious to most of our cultivated varieties. One of the most successful growers in this section it is understood took twelve first prizes and two second out of a possible fourteen, at the Montreal exhibition last September. The same gentleman has visited exhibitions in Toronto with nearly as great success. This demonstrates that the vicinity of Ottawa is quite equal if not superior to any other part of the Dominion, either east or west, for the growth of this delicious fruit. It is believed that the best localities for the vine have not yet been brought into cultivation; the rocky foothills and upper southern slopes of the Chelsea mountains, near Ottawa, contain many hundreds of acres which though unfitted for cereal crops, owing to the rocky nature of the soil, might by careful selection and terracing, be found most suitable for vineyards.

It is understood that several gentlemen have purchased and planted,] or are about to plant extensive vineyards close to the city; but there is no reason why any good situation convenient to a railway should not be quite as favorable for market purposes.

One thing is very evident, that the rapid extension of the vine will lead to the production of wines here, as has been the case about Toronto, Hamilton, and other western cities. This however is not looked upon as an unmixed evil, as it is generally conceded that the population of vine-growing countries are amongst the soberest of nations. Within the past few weeks a cablegram has been received from France, stating that a meeting has been held at Bordeaux, at which the Mayor was present, for the purpose of forming a syndicate, with the view of transferring to Canada some of the wine establishments so largely carried on in that country—the ravages of the *Phyloxera* being so serious that the cultivation of the vine is becoming year by year more difficult. It appears that this insect does not attack the roots of the native American grape; and some experiments have been made by importing the Canadian wild fruit seeds, and grafting the seedlings raised from them with the wine-producing plants; but although the grape is one of the easiest woods to graft below the soil, it does not readily unite when the operation is performed above ground; the consequence is, the scion takes root, and being a stronger grower than the native, the ends sought to be obtained are found abortive;

and it is now decided to examine the Canadian grape with the view of seeing what can be done with them by applying the accrued wisdom and experience of the French vintners to their manufacture into wine. The speedy prospect of Ottawa being a great railway centre ; her easy access to the head of tide-water by the Quebec, Montreal and Ottawa Occidental Railway or other easterly route, would point to this locality as a desirable point to direct the attention of the French delegates when they come to "spy out the land," which will probably be the case next spring. And it is trusted that the Governments of Ontario and Quebec, and the Dominion will all three unite in placing matters in a proper light before them, at the same time securing the most suitable guides to show them over the country, and advise them as to the best localities for future operations.

The French Commissioners were favorably impressed at the Philadelphia Exhibition in 1876, with the grapes there displayed by the Fruit Growers' Association of Ontario, although these specimens passed over several hundred miles of railway during exceedingly hot weather. The fruit would have been much more attractive had it been seen on the vines at the points where grown.

The writer is well acquainted with many of the grape growers around Ottawa, and he has yet to learn of a single instance of any of them who have failed in securing good paying crops where ordinary skill and intelligence have been exercised ; at the same time, ninety-nine out of every hundred engaged in the business are extending their plantations, and securing as far as possible any new or other varieties for trial which they do not possess, whilst others are rushing enthusiastically into the field to add their quota to this new yet fascinating Canadian enterprise.

Every year brings forth new and sometimes better varieties ; these are being produced by our Canadian and American hybridists, so that the grape list is being constantly extended and improved, both in quality and earliness of ripening. This leads one to the conclusion that the possibilities of grape culture on this continent, and more especially in this section, are practically unlimited ; and it is predicted that our vineyards before fifty years, perhaps twenty, will rival those of sunny Italy or La Belle France, and wherever either farm cottages or suburban residences are dotted over the land, the vine will be found as one of the necessary accompaniments of health and civilization.

The business of shipping grapes in the fresh state to the markets of Britain has not yet been attempted, but when this fruit becomes more plentiful, and as shipping facilities are more extended and rapid, shippers will not lose sight of this branch of the grape industry.

THE POCKLINGTON GRAPE.

DISCUSSION AT THE MEETING OF THE AMERICAN POMOLOGICAL SOCIETY, IN
BOSTON, SEPTEMBER, 1881.

George A. Stone, of Rochester, N.Y., said : As most of you know, the Pocklington originated at Sandy Hill, Washington county, N. Y., not supposed to be a grape section. As it is grown in Rochester on light soil, I think it ripens a little earlier than the Concord. This year the Concord did not set well where the Pocklington set very perfectly. In fact the vines were overloaded. In quality we claim that it is as good as the Concord in its best state. The growth of the vine is good, but it cannot be called an extra free grower. I have not discovered any mildew or any disordered condition. Its cropping quality certainly is all that can be asked. It will bear as many grapes as any other variety, and mature them. I think it is a very promising new grape for vineyard planting.

H. E. Hooker, of Rochester, N.Y., says : I think Mr. Stone has very accurately described the appearance and condition of the Pocklington in Rochester. The vines most exposed to the weather seemed to maintain a perfectly healthy foliage, so I think there can be no question about its being ironclad in respect of foliage. Last season I saw the Pocklington fully ripe at Rochester, and was very agreeably disappointed in its quality. It was to my taste fully as good, sweeter, and a little more sprightly than the Concord.

The President: What time last year?

H. E. Hooker : It ripened fully as early as the Concord on the adjoining vines. It was September 16th. Last year was a pretty early season. It is not to be classed with the earliest grapes, but sufficiently early for all practical purposes, in any locality for market. It is certainly remarkable for the number of handsome bunches produced on a vine. I think it is not claimed for it that its quality is of the highest excellence, but it is what would be called very good for quality.

T. S. Hubbard, of N.Y. : I was in the vineyard at Rochester four or five weeks ago, and it certainly was a very fine show of Pocklingtons, the first year of bearing. I was agreeably disappointed in seeing them. The vines looked very well, were making a good growth, and the fruit all that could be asked. I have some vines growing the second year that are very healthy, not as vigorous in growth as the Concord, but fair growers.

George W. Campbell, of Ohio : My experience agrees with that of Mr. Hubbard.

The President, M. P. Wilder, of Boston : I had fruit sent to me twice last year from the original vines, and I was surprised at its beauty. You may recollect that in my address I alluded to it in connection with the wonderful effect of hybridization, whether by the hand of man, by insects, or by the air. I say that the Pocklington may be the beginning of a race of grapes equal in beauty and perhaps in excellence to the Cannon Hall Muscat. I think it is a most promising variety, and although I would like to ameliorate the flavor of the Pocklington a little, still it is a wonder in its way. *

REPORT ON FRUITS.

Henry Paffard, Esq., Niagara, writes : " I have not fruited the Burnet Grape yet, but expect to do so next season. Until last year I did not find it a free grower, when it made rapid progress. It is too soon to say anything about the Diadem Raspberry, sent out last year. That welcome visitor, the HORTICULTURIST, is received regularly, and will assist in keeping alive an interest in horticultural matters, a work that your valuable Association is doing so much to promote."

THE GREENFIELD PLUM.

The following description of this plum is from Mr. A. Gilchrist, Guelph :

" The plum came to hand in good order, and was much larger than I expected, quite the size of a well-grown Lombard, as far as I could judge. Fruit medium ; color yellow, nearly covered with light crimson ; suture shallow, roundish oval ; stalk about one inch long, slender, in a narrow cavity ; flesh yellow, coarse grained, juicy, being more acid under the skin. Cannot judge of the quality, as it was not in condition ; parts freely from the stone. I have no doubt it will prove valuable in the North-west."

This plum, it is claimed originated with Mr. Greenfield, of Ottawa, Ont. The tree has the style of growth and foliage of the Chickasaw plum. Your Editor has never seen the fruit. Mr. P. E. Bucke says that the tree is perfectly hardy at Ottawa.

REPORT ON PLANTS RECEIVED.

William Gray, Woodstock, Ont., writes : The Downing Gooseberry is a great success, free from mildew. The raspberry and strawberry plants received two years ago were a failure. My Flemish Beauty Pear is fine ; the tree fruited last year, doing well ; also the Clapp's Favorite Pear, which has fruited the last two years. The first year I allowed the fruit to ripen on the tree, which proved to be almost useless—rotted at the core, taste insipid. This season I picked the fruit as soon as it parted freely from the branch, and kept it for about one week in the house. A better

pear I could not wish. Grimes' Golden Pippin Apple did not grow. Glass' Seedling Plum is growing fast, and is a very fine tree. It has fruited the last two years, but I cannot say much in its favor, I have so many other varieties that are much better. My Burnet Grape has not fruited yet. The raspberry I got from the Association last spring made a growth of five or six feet. I have given all the trees and plants a fair trial, and nearly all have been satisfactory. My soil is a very heavy loam, hard clay bottom, well drained and fed.

WINE MAKING.

A few words in answer to the inquiries of John Knowlson, Lindsay, about wine making. The method adopted by myself in making my own wine, which is pronounced very good by those who have tasted it, is as follows: As soon as the grapes are ripe, pick them carefully and clean from leaves or dirt. Reject all unripe or damaged fruit. Keep the fruit in a cool, dry, airy place for a few days. Then run them through a mill, and press them so as to abstract all the juice. Strain it into wood, stone or glass vessels. Glass carboys, holding 12 or 13 gallons, are very good. If the fruit is acid, put from one-half to one pound of sugar per gallon; let it ferment say from one to three weeks—you must be your own judge as to the time. Then put it away in your cellar and leave it until the next spring; draw off and bottle. You can sweeten to your taste, but I think you will find it sweet enough. I have always succeeded in the way mentioned, and have made yearly from 12 to 20 gallons, enough for myself and some to give to my neighbors in sickness or otherwise. I have some that is seven or eight years old. It is not really ripe until five years of age, and then it is fit for a king. Some will say it is too long to wait. I answer, if you want anything good, you must abide the time necessary for it to mature.

FIG CULTURE.

Dr. G. F. Needham, of Washington, D.C., writes: Last September I received an enthusiastic letter from Mr. Thomas D. Lloyd, of Barrie, Ont., from which please allow me, for the benefit of your readers, to make a brief quotation:

"In the spring of this year I received from you 12 young fig trees. Ten of them have grown from two to three feet, with several branches, and to my surprise are already producing fruit."

I would be delighted to send my pamphlet, "Fig Culture," to any address enclosing 10 cents. The whole subject of fig culture, and how to preserve the fruit for home use and the markets, is plainly discussed. The *California Farmer* says of my little treatise: "Very valuable, and everybody should have it."

THE ROT IN TOMATOES.

Our thanks are due to Mr. W. E. Wellington, of the firm of Morris Stone & Wellington, for a copy of the *Gardeners' Chronicle*, Nov. 12th 1881, from which we copy the following paper on the Fungoid Diseases of the Tomato, by Charles D. Plowright, King's Lynn, England. This paper will probably fully answer the inquiry of Mr. Thomas Coates, in the November number :

During the autumn of last year (1880) I carried on a series of investigations concerning the various fungi which deleteriously affect the Tomato, having the opportunity of examining any and every diseased specimen of Tomato which occurred in a large Tomato growing establishment near King's Lynn.

Tomatos grown in the open air in this country are a very uncertain crop, sometimes proving a very profitable venture, but not unfrequently the reverse. The Tomato disease is almost as well known to gardeners, and as much dreaded by them, as the Potato disease is. A very large number of outdoor diseased Tomatos were examined by me last year. The appearance of diseased Tomatos is so well known that it is almost unnecessary to give any description of it beyond stating that they have a peculiar bruised look, and are more or less mottled with black or dark brown patches of disease. These patches increase in size after the fruit has been gathered to such an extent as to render it valueless. If the Tomato be examined in this state he must indeed be an acute mycologist who could demonstrate the fungus which has caused the disease, for, bearing a few hyaline mycelial tubes permeating the substance of the fruit in and towards the margins of the spots, nothing adventitious can be detected. At any rate, I was quite unable to find any perfect fungus upon the numerous specimens I then examined which could with certainty be credited with causing the mischief. This is not to be wondered at when it is remembered how rarely we are able to discover the perfect *Peronospora infestans* upon the diseased tubers of the Potato. On September 10 of this year a specimen of a typically diseased Tomato was brought to me with the information that although the Tomato was diseased the plant which had produced it was healthy. I at once visited the spot and examined the plant in question. Sure enough the Tomatos on it were diseased to a large extent, but the plant looked healthy. A few dead-looking spots were observed upon the lower leaves, which were examined with a pocket lens, but not very thoroughly, as it was raining at the time. When, however, these dead-looking spots were examined microscopically, they were found to be due to the presence of *Peronospora infestans*. The fungus was not producing its conidiophores very abundantly, but still there it was without doubt. The central portion of the spots where the *Peronospora* first made its appearance were now nearly free from it, it being more or less confined to the circumferential portions of the spots. The appearance of these spots was quite unlike the spots produced by the same fungus upon the Potato

leaf. On the Tomato leaf the spots lack the black rotting look which is so characteristic of the Potato disease. The Tomato leaf is larger and harder, so that instead of putrefying it rather dries up; the spots themselves look more like the sun-scalds one sees upon the leaves of plants grown under glass. After diseased Tomatos have been gathered a short time decomposition rapidly sets in, and they then harbor an incredible quantity of fungi. But as these fungi are, as a rule, only such as are found upon almost all decomposing vegetable matter, it is useless to enumerate them. One species, however, seems to me worthy of special note, as when it appeared upon a Tomato the latter underwent very rapid decomposition. The fungus is, I believe, an undescribed species of *Sphæronema*; it may be thus described:—

Sphæronema lycopersici, n. sp.—Perithecia minute, spherical, arranged somewhat concentrically upon the surface of diseased Tomatos. Each perithecium surmounted by a dirty flesh-colored globule of spores. Spores minute, cylindrical, or somewhat sausage-shaped, hyaline, either with or without nuclei. On outdoor Tomatos, Clenchwarton, King's Lynn, Oct., 1880. Perithecia about 150 mk. in diameter. Spores 10 by 2—3 mk.

The diseases of the Tomato to which I have given most attention, however have been those peculiar to fruit grown under glass. It is worthy of remark that the *Peronospora* disease does not occur under these conditions; at least if it ever does do so it is very uncommon.

The first and most important disease to which I would call attention is of frequent occurrence, and may be termed for distinction's sake the "black spot." It makes its appearance usually (but not invariably) upon the green Tomato as a circumscribed brownish spot of no great size upon the crown of the fruit, usually near the remains of the style. As the Tomato ripens the spot has a whitish hue from the semitransparent dead cuticle of the fruit, which is at this time unaffected with any fungus growth, being simply dead. Specimens of this disease have been submitted to more than one horticultural journal, and pronounced to be "sun-scalds." This, however, they cannot be, for the spots of disease are upon the crown of the fruit, which hangs downwards, so that any sun-scald would be upon the base of the fruit, which is uppermost. I have seen numerous specimens *in situ*, and can therefore speak positively upon this point, as it might be suggested that the primary lesion was due to a burn, and that the fungus afterwards attached itself to the injured spot. As the Tomato ripens and assumes the beautiful red color of maturity, the spot, which varies in size from 3 to 10 millimetres, acquires a jet-black color. If a section be now made through it, it will be found that this blackness extends inwards towards the centre of the fruit, to a much greater extent than is apparent from the exterior. It is distinctly defined and harder than the parenchyma of the fruit. If a portion of this black substance be examined microscopically, it is found to consist of an assemblage of black mycelium compacted pretty closely together, having the appearance of the mycelium of the *Dematici* or black moulds. Upon the upper surface—the black spot—four fungi are found; one a true black mould, the other three polymorphic states of a *Phoma*. The black mould may be thus described:—

Sporocybe lycopersici, n. sp.—Tufts olive-green, flocci erect, twice or thrice septate, about 5 mk. in diameter. Heads terminal globose, 20—30 mk. across. Spores numerous, sub-globose or ovate, black, 3 mk. long.

The Phoma is preceded by conidia and macroconidia.

CONIDIA: *Cladosporium lycopersici*.—Hypa tufted, septate, irregular in outline at their apices, springing by their bases from a black spot; compacted mycelium, spores abundant, cylindrical, black, 1—3 septate, slightly pointed at their extremities; 10—30 mk. long, by 8—10 mk. wide.

MACRO-CONIDIA: *Macrosporium lycopersici*.—Flocci, well developed, black, septate, somewhat flexuous, producing abundantly sooty-black irregular pyriform to sub-quadrate muriform spores, which vary in size from 10—70 mk. long, by 10—20 mk. wide.

STYLOSPORES: *Phoma destructiva*.—Perithecia carbonaceous, minute, globose, spherical clustered spores, hyaline, oval, cylindrical, binucleate, 5—6 mk. long, by 1.5—1 mk. wide.

Another disease which sometimes but much more rarely attacks Tomatos while still growing is due to a *Dactylium* very closely allied to, if not identical with, *D. roseum*, B., from which it differs in producing its spores in threes, and in growing parasitically upon a living plant. This disease seems more especially to affect that variety of Tomato known to gardeners as the Trophy, and commences upon the base of fruit, near the attachment of the stalk.

Dactylium lycopersici.—Forming a dense floccose whitish pink mass. spores hyaline, with a tinge of pink, oval or ovato pyriform, uniseptate, often apiculate, produced in threes upon the terminal extremities of erect sparsely septate hyaline hyphæ.

APPLES IN COLD CLIMATES.

Orchardists living in the colder parts of Canada will be greatly interested in the following valuable article, contributed to the *Rural New Yorker* by Dr. T. H. Hoskins, of Vermont:

My orchard is on the shores of Lake Memphremagog, six miles south of the international boundary line, in latitude 45 degrees north, and is elevated 750 feet above the sea level. This territory lies fully open to the sweep of polar waves of low temperature, and there are no winters in which our thermometers do not frequently register temperatures lower than minus 30 degrees. Fifteen years ago when I began to plant an orchard, it was believed to be impossible to grow any kind of apples except the Siberian crabs in this section of Vermont and the adjoining parts of Canada. Many thousands of dollars had been expended in vain by our people for the purchase of fruit trees from southern New England and Central New York. It has been proved at a heavy cost that the standard apples of the great apple regions to the south and west of us cannot be grown here. So far as I am aware, no tree of the Baldwin, Rhode Island Greening, or Rox-

bury Russet ever lived to reach bearing age in North-Eastern Vermont. Even such hardy kinds as Westfield Seek-no-Further, Blue Pearmain, Tolman Sweet, Fameuse, and Red Astrachan, succeed only locally and precariously, so that they cannot be grown profitably for market.

The task which I set myself fifteen years ago was to test every hardy sort I could hear of and obtain, in order to see whether varieties did exist which could be planted here and in similar exposed localities with security. I have accomplished the work, after testing over 250 varieties, collected from the coldest localities in America. The result is that this part of New England, from having not a single variety of apple (outside of the crabs) which the people had confidence to plant, is now rapidly becoming a region of orchards unsurpassed in any part of the country for vigor or fruitfulness.

TOO TENDER.

In the first place I will give a mere list of the varieties which have been utterly "wiped out" by Jack Frost. These embrace the Williams' Favorite, Yellow Bellflower, Black Oxford, American Summer Pearmain, Red Canada (not a Canadian apple, notwithstanding the name), Morgan Sweet, McClellan, Grimes' Golden, Gravenstein, Granite Beauty, Fairbanks, Ramsdell Sweet, Canada Reinette (not grown in Lower Canada to any extent), Franklin Sweet, Fall Orange, Summer Hagloe, Colvert, Munson Sweet, Golden Sweet, Jewett's Fine Red, Fall Pippin, Moses Wood, Minkier, Mamie Cathead, Cooper's Market, Yellow Ingestrie, Whitney Russet, besides quite a number "not in books." It will be noticed that there are many sweet apples in this list. My experience is that, as a rule, this class of apples is more tender than others. There are very few to be found in the Province of Quebec; so few, indeed, that the people have no taste for them, and they are not saleable in the markets of the large towns. Now come the

"ALMOST HARDY,"

the most vexatious of all, because they neither thrive nor die. Some of them, indeed, do tolerably in favored spots, but none will do to plant extensively with a view to profit.

ST. LAWRENCE.—Around the city of Montreal and on the hills which rise out of the flat country between Lake Champlain and the St. Lawrence River, this beautiful and excellent Fall apple is productive and profitable. It is doubtless a Fameuse seedling (as so many of the Lower Canadian apples are), having a similar flavor and the same snowy-white flesh. Very few of these Fameuse seedlings do well in the more elevated country. Both parent and progeny develop the vice—inherent in them, but little seen under the more favorable conditions—of spotting, and to this the St. Lawrence adds cracking and shy bearing, together with some tenderness of tree. Not profitable here.

RED ASTRACHAN.—Tree tender; fruit smaller and less fair than in more favorable places. Not profitable.

FAMEUSE.—Bears young and well, but the fruit is not so large or so fair as at Montreal or the Champlain Valley, and the tree is plainly tender. Profitable, yet not safe to plant extensively.

BEN DAVIS.—Tree tender and short lived ; fruit hardly “good” elsewhere, and no better here. Though a free bearer, not profitable.

POMME GRISE.—Tree tender, fruit small and knurly; not profitable, though the quality is fine.

NORTHERN SPY.—In protected spots this noble variety sometimes succeeds here as well as anywhere in the country. Our Spys took the first premium at the State Fair this fall. Nevertheless the tree is too tender.

RIBSTON PIPPIN.—Living at a poor, dying rate, it still bears well and bears fine fruit ; but after a few years’ struggle gives up the ghost.

FALL WINESAP OF THE WEST.—A good little apple, just now (November) in eating, but the tree is not hardier than Ben Davis, and is not productive.

SAXTON STRIPE.—A fine flavored October apple ; tree productive, but tender, and soon falls into a decline ending in death.

EARLY JOE.—Struggles along and bears some fruit, but survives only in an unhealthy state.

JONATHAN.—In the same category with Early Joe—the more’s the pity.

SOPS OF WINE.—The most successful of those not entirely so. The tree suffers from the winter, yet bears good crops and seems to get hardier with age.

TOLMAN SWEET.—This variety grows thriftily and bears well, and one would not for several years suspect it of wanting hardiness ; but when it comes to full bearing, unless carefully propped up, it breaks down all round, and the breaks invariably reveal a rotten interior, with only a skin of healthy wood. Sorry to have to give up this excellent winter sweet. These two lists of complete and partial failures might be considerably prolonged did space permit. I have given only the varieties best known and likely to be tried by others similarly situated.

HARDY AND GOOD.

The more pleasant list of kinds that have proved successful in point of hardiness and quality of fruit embraces also a considerable number of varieties. From these I select the best of those which add productiveness and general thrift to the first named qualities, as follows :

TETOFKY.—With all its merits this apple has the fault of dropping a considerable part of its crop before it is ripe. Not recommended for market on that account.

YELLOW TRANSPARENT.—Of the same season (August) as Tetofsky ; beautiful, very good, exceedingly productive, does not drop. Transports well for a summer apple.

DUCHESS OF OLDENBURG.—It is hardly necessary to praise this large, early-bearing, handsome, and heavy-bearing September apple. Its only moderate quality is its sole defect, yet no apple of its season is more marketable or more profitable. It can be grown much more cheaply than potatoes, and never brings so low a price here. Still it is possible to have too many of an early apple, unless you are prepared to evaporate them.

WEALTHY.—This is the king of all the hardy apples. As productive, hardy, early-bearing, large and beautiful as the Duchess, it, in this region,

keeps well until March, and outsells Baldwin or any apple brought here from the south.

MAGOG RED STREAK.—If it were not for the Wealthy, this would stand at the head of our Winter apples. It is large, handsome, and a good keeper until April. The tree is hardy, thrifty, and a profuse bearer, but the fruit has too little red to compete with the splendid Wealthy as a market apple. And yet it is styled in the report of the Iowa Horticultural Society, "the beautiful Magog Red Streak."

SCOTT'S WINTER.—This is the apple which well replaces, for us, the Roxbury Russet of a milder clime. It is of medium size, heavily striped, and sometimes covered with red. It is "hard as a rock" until April—sour, and only useful for cooking. As the warmth of Spring begins to reach it, it mellows, becomes mild, aromatic, and far better in quality for dessert than the Roxbury Russet. The tree is a true "iron-clad," a profuse bearer on alternate years, with a good crop in intermediate seasons. In my orchard of 1,400 trees, the Wealthy and Scott head the list—400 of each. The Scott keeps well into July, and not only keeps, but keeps fresh and crisp, with almost no loss, when properly handled and stored.

RENEWING STRAWBERRY BEDS.

BY OUR MEMBER IN ENGLAND.

I have just all but finished my planting on the principle of dividing the branch or clump into separate heads or crowns, and choosing the best of them for replanting. My two beds or borders are, one just 100 feet long by 12 wide, taking, at 2 feet apart each way, just 300 plants; the other is half the width, 6 feet by a length of about 150; I have not measured it, and therefore having 225 plants, so that I have in all over 500 plants—a pretty little lot for a small garden. The idea of planting this way was quite new to me when I first read of it this summer, but it commended itself to me at once, and my little experience in the planting has fully confirmed my favorable impressions. In the first place the saving of trouble is so great that it is like expunging that word out of the sentence altogether, and instead of giving up the growing of strawberries on account of the trouble, I feel now as if I should not mind if the replanting was a matter of course every year. Now as regards the efficacy or sufficiency of this mode, I cannot see any reason for doubting it. I find, after doing all the manipulation myself, my man only digging the ground (two spades deep) that every crown or head in the clump is to all intents and purposes a new plant of this year's growth, springing like a bud out of the old sort, which

it appears to me is the only part of the plant that gets old—just like rhubarb. I believe from all my examinations and observation that the crowns which constituted the foliage of the plant and bore the fruit last season perished when they had done their duty for that year, and gave place to a new growth of buds out of the old root. Each one of these seems to me as completely a new plant as those from the runners, with the difference that they are a generation older, being the parents of the runners, but still both coming into existence the same year. So completely is each crown an entirely new plant, that after having derived its subsistence from the root from which it springs during its infancy, as soon as matured and having put forth fruit and runners, strikes out its own fibrous roots at its base and junction with the old root, which done it is independent and draws only on its own roots. In separating these crowns, I get in each one a complete new plant, with its fibrous roots, just like the new runner, only a generation older and better established—fitter, I should say, than the runner to bear a full crop next summer, but of course being further advanced, must grow itself and fail first. I conclude, therefore, that this system of replanting should be repeated every two years, so as not to let the plants get dependant on a foundation of old roots, or get, as they do when left to themselves, so thickly clustered that they have not, and cannot have, the necessary aid and freedom to grow to perfection, but on the contrary degenerate until they at last grow barren and die. My theory is that if I did not divide these crowns, their cones, so to speak, would during the autumn and winter go to form an addition to the mass of old root, their tops of course decaying, and new buds would spring out in their place, to form the crowns and bear the fruit next year. When I see the result next year and reap the fruit I shall know more about it.

THE DEMPSEY POTATO.—Mr. J. Mather, of Keewatin Mills, North West Territory, states that from his pound of the Dempsey potato he obtained eighty-one pounds, and that the smallest was as large as a goose egg. The potato was in every respect a decided acquisition, and superior to any other variety he had.

BURNET GRAPE IN THE PROVINCE OF QUEBEC.—My Burnet Grape fruited this year for the first time; it had only two bunches ripe about the end of September. The flavor is very fine—beats all others I have. J. W. CUMMING, *St. Hilaire, P. Q.*

PLANT YOUNG TREES.

Among farmers generally there seems to be a prevailing idea that large trees are best for planting. At least, in ordering, a great majority of the farmers who buy to plant order large trees, which choice I believe to result more from custom than any other cause, and it would be to the farmer's interest in selecting the size to plant, to give this subject more consideration than is generally given.

In planting on the farm what advantages over small trees can be claimed for the larger ones? Not any. If small trees are planted properly, and for the first two years are given a little extra care and cultivation, they will, in every case make finer and better trees, a much handsomer, more valuable and durable orchard than the larger.

Large trees lose in removal, besides the greater part of the tap root, about one half or more of their most valuable roots, consequently leaving the tops too large in proportion to the amount of root, the evaporating surface far greater than the absorbing, and when planted, even though the buds swell and apparently begin to grow, they may soon wither and die from not having sufficient root to furnish the needed fresh supply of nourishment.

The condition of the trees may be bettered somewhat by cutting back, but even then their vigor will be greatly impaired, and they can never equal in thriftiness of growth the smaller trees with roots and tops entire. Large trees are apt to become leaning, crooked or unhealthy from being blown about or shaken by the wind.

With small trees the case is far different, just the reverse in every particular—they have every advantage over the large. At the nursery they cost less; if procured from a distance the freight charges are less, besides being more easily handled and planted. They are surer to grow, for having roots that are not mutilated, almost entire, and proportionate to the size of the tops, they will become established at once and grow; and then making nearly the whole of their growth upon the ground on which they are to remain, they soon become acclimated and perfectly adapted to the soil and location, making more stocky and healthy trees. And now, with all these advantages in favor of the smaller trees, besides the testimony and experience of all the most successful orchardists and large planters, is it not more advantageous to plant young trees?—E. L. WALKER, in *Farmers' Home Journal*.

FLOWERS.—Show us the person who loves flowers, and we will show you one that has a warm heart, that gushes forth joy to those around. It may be hid beneath a rough exterior, but like the unsightly rock, which, when broken open has gems inside that sparkle and dazzle the eye.

Don't pass through this world as though it was made for you, and use it for the one selfish, sordid motive, to make money and hoard it away. Work to please others—try to make your home beautiful and attractive. Don't repress the ardour of your children if their taste runs to "fixing up" the old birthplace.

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[No. 1.

THE GLADIOLUS.

The beautiful colored plate which adorns this number will enable our readers to form a very correct impression of the perfection in form and coloring which has been attained in the cultivation of a flower which, perhaps, many of them will well remember under the name of Sword Lily. If our readers have not recently noticed the progress that has been made in the production of new forms and brilliant colors, they will thank the Directors of the Association for calling their attention to it again by giving them this colored illustration, and the opportunity of seeing it flower in their own gardens, by offering them as one of the premiums which they can choose, three bulbs of this interesting flower.

Our climate is well suited to the growth and culture of the Gladiolus, much better than that of England or France, and it is as easily grown and cared for as the potato. It is only necessary to avoid soils, that are wet, and therefore cold, which means ground that is badly drained, and plant in such ground as one would select in the expectation of raising a good potato crop. In enriching the bed where it is proposed to plant them, do not use fresh or partially fermented manure, as this tends to produce disease in the bulbs. The best is that which has been thoroughly decomposed and composted with old sods and ground bone. After the weather has become settled in spring and the ground in good working condition, the bed should be dug over and the manure thoroughly mingled with the soil. Then as soon as all danger of severe frosts is passed the bulbs may be planted out about ten inches apart each way, and four to five inches deep.

A nice bed of Gladiolus is a most showy and attractive feature of the after midsummer flower garden, and is particularly desirable on account of the blooms appearing at a time when flowers are less abundant. The colors are so bright and showy, and withal so varied, the form of the flowers so elegant, and these borne so conspicuously upon their tall spikes that they never fail to produce a most beautiful effect. The cut blooms are also particularly useful for large boquets and table decoration, for if the spikes are put into water, though only the lower flowers are open, the buds above will all expand in succession as perfectly as if they had never been severed from the plant.

In the autumn, when severe frosts begin to appear, the bulbs should be taken up, the stalks cut down to about an inch from the bulb, then after allowing them to dry for a few hours they can be stored in a box in the cellar, where they will be free from frost until they are wanted for planting in the spring. Small bulblets will be found adhering to the bottoms of the large bulbs; if these are saved, put into a paper bag and kept out of the ground for one whole season, and then sown in good rich soil in the spring of the second year, they will grow, increase in size, and the following year will produce flowers like those of the parent bulb. It is also important to keep the bulbs away from mice for they are very fond of them.

Our climate is so much better suited to the cultivation of the *Gladiolus* than that of Europe that there is great inducement for those who are fond of experimenting to raise new varieties from seed, all of which will be more or less beautiful, and some of them possibly better than those for which our European raisers are so fond of charging us five dollars a piece. It only requires two, or at the most, three years to grow nice blooming bulbs from the seed, so that one does not have to wait very long before reaping the reward of his labours. It is something to have learned how to "labor and to wait."

The colored illustration which has been kindly supplied at cost to our readers by Mr. James Vick, of Rochester, N.Y., represents flowers selected from his collection of named varieties on account of their fine form and contrast in color, and yet he says they are not superior to scores of others. It is not necessary that the planter confine himself to named varieties, many of the unnamed are quite as pleasing and far less expensive, and those who wish a quantity of bloom can obtain mixed sorts at little cost.

A FEW HINTS ON GRAPE GROWING.

Great attention is now being given to the growing of grapes in this country. It is not very long ago that we had only two varieties of grapes in cultivation, and neither of these were suited to the climate of any large part of the Province. The Catawba would ripen its fruit only in the most favored spots, such as the Lake Erie shore or some specially warm and sheltered nook. The Isabella, in favorable seasons, ripened over a somewhat larger area, but that was but a limited territory as compared with the whole. The arrival of the Clinton extended the limits of possible grape culture, but in our climate

the heat did not continue long enough or was not sufficiently intense to develop its saccharine properties so as to make it a popular table grape. But within a short time the number of varieties has been greatly multiplied, resulting in the production of several possessing great excellence, capable of enduring our climate and of ripening their fruit in almost every part of the land.

Since the advent of these varieties adapted to general cultivation, our people have not been slow to appreciate what a grand addition nice, rich, juicy, sweet grapes are to our list of fruits; nor slow to find out how much sooner

they come into bearing than the most of our fruit trees ; that instead of waiting five, six, eight or ten years for fruit, they are sure of gathering a nice supply the third season. Nor have they been slow to find out that the product of a few vines was not only a beautiful and toothsome addition to one's home comforts, but a profitable source of money revenue. It was soon found that an acre of grapes would yield five tons of fruit, which, if sold at the moderate price of four cents per pound, brought to the producer the comfortable item of four hundred dollars, which left him, after making liberal allowance for labor and capital invested, a better income than any, even the most favorable, yield of grain. Hence it is that to-day the planting of grapes has reached such vast proportions, and that new kinds, which promise to be well adapted to our climate and to take in the market, are so eagerly sought after. Hence, also, it is that inquiry as to the methods of pruning, training and caring for the grape is so active, and everything throwing light upon the subject so eagerly sought.

To help those who are thus seeking information upon a matter so important and interesting these hints on grape growing are given, believing that, in as much as they embody an experience extending now over many years, they will be found helpful to those especially who are but beginners, those who are just trying their prentice hand at the mystery of grape growing, nor will they find the lesson at all hard to learn. The grape-vine is a very patient plant, yielding generously her luscious fruits under even very crude treatment. But, as in everything else, he will reap the finest fruit and the most money who gives his mind to the business, attends carefully to every detail, and never allows any item of the work to suffer through neglect. There may be "no

royal road to learning," but there is a royal road to success in grape growing, and none may travel it but those who have royal blood in their veins ; those who, though they claim not descent from regal sires, are nature's noblemen ; men of earnest purpose, who, with head and heart devoted to the culture, will watchfully supply every want and guard against every foe. To such there will be truly golden harvests.

THE SOIL, AND PREPARATION FOR PLANTING.

One of the first questions that arises in the mind of the intending vine planter is whether the soil at his command is suitable, and what the preparation it requires. Fortunately the vine is not very fastidious in its choice of soils. I have planted it on gravelly, sandy and clay soils, and find it to thrive vigorously, and to bear profusely on them all. One thing it requires, and if this be given it, there is hardly any soil in which it will not yield generous returns ; but that one thing is essential to healthy and permanent growth. That thing is this : the soil must not be wet. If the drainage be not such that the soil is dry at all times, that the water does not stand in it at any season of the year, it must first be made dry by thorough underdraining. When this is attained, the character of the soil in other respects seems to be of little moment.

* We may take it for granted that the vine will flourish on soil suitable for an apple-orchard ; and may proceed to plant on such soil with every expectation of success.

Nor does the soil need such long and expensive preparation as many writers would have us to believe. Soil that has been deeply and thoroughly tilled ; soil that has been tilled as it ought to be to yield a good crop of Indian corn, will be in a suitable condition for the

planting of grape vines. The deep trenching and heavy manuring advised by some writers I believe to be not only unnecessary, but positively injurious. It causes an undue and unnatural growth of wood; it causes the texture of the wood to be less firm, and the vine becomes less able to resist extremes of temperature.

I conclude, therefore, that any soil that is well drained and in suitable tilth to produce a good crop of Indian corn, is suitable for the vine.

PLANTING THE VINE.

After considerable experiment and much personal observation, I have been fully convinced that we ought to give more space to our vines than has been usually given. Not less than twelve feet apart each way is required for the best development and most economical and profitable culture. Parties interested in the sale of vines may urge closer planting; but experience and sound reason, based upon a knowledge of our climate and of the habits of the vine, conspire to indicate this distance as the best for us to adopt, especially if planting a vineyard. If planting but a few vines in the garden, where space is limited, they may be set as close as eight by ten feet.

Of the manner of planting, it can surely not be needful to write. Any one that has set out a tree or a cabbage plant, knows enough to set out a grape vine. It is a living plant, not a post, and should be treated accordingly. The hole should be made large enough to allow of the roots being all spread out in their natural position, and then carefully covered with finely pulverized soil. Nor is the season of much importance. At any time after the leaves fall in autumn, and before the buds burst in spring, and the soil is in condition to be worked, the vine may be planted with success. The measure of success

will depend much on the care and judgment of the planter. A covering of coarse litter upon the ground over the roots, usually called by gardeners a mulch, will well repay the trouble of putting on.

Plant them in fall or spring, as may be most convenient; plant carefully, and mulch after planting.

PRUNING AND TRAINING.

FIRST YEAR.

When the young vines in a new plantation begin to grow, all the shoots but one—usually all but the one nearest the ground—should be rubbed off. If, however, the one from nearest the ground seems to be very feeble, or from any other cause unsuitable, then the shoot next higher on the cane should be preserved and all the others rubbed off. A small stake—a strip of lath will answer—should be thrust into the ground at each plant, and the vine carefully tied to that, as it grows during the summer. None but slovenly cultivators will allow the weeds to grow and choke the young vines; and such persons should never plant them. This will be all the care that the vines will need during the first season.

At the end of the first season's growth the young vine will have the appearance shewn in Figure No. 1.



Figure No. 1.
VINE ONE YEAR TRANS-
PLANTED.

SECOND YEAR.

The next spring—usually in March—the vine should be cut back to two or three buds. After the shoots get fairly started two of the strongest may be selected, and all the others rubbed off. As the growing shoots lengthen, they should be tied to the stake, and treated precisely as in the preceding summer.

During the summer, preparations should be made for permanently staking and trellising the vineyard. And here we come to a point upon which there is great diversity of opinion and practice,

—I mean the method of training. There is not space enough in these hints to describe the various methods that have been recommended.

I will describe the two methods most successful in our climate, and my readers can choose the one most convenient for them to adopt.

At the end of the second year the vine will have the appearance shewn in Fig. No. 2. Now, if the trellis system be adopted in the spring of the



Figure No. 2.

VINE TWO YEARS TRANSPLANTED.

THIRD YEAR

these two canes should be stretched horizontally in opposite directions, and fastened in that position by being tied to the lowest wire or horizontal bar of the trellis. The vine will then have the appearance shewn in Figure No. 3.

Figure No. 3.
VINE IN THE SPRING OF THIRD YEAR WITH ARMS EXTENDED.

When the buds start into growth the shoots should be trained upwards, perpendicular to these arms at a distance of about six inches apart, and all other shoots rubbed off.

Some difficulty may be experienced in making the eyes nearest to the vine

to break well and form strong canes, as the tendency is to make the strongest growth at the extremities. This may be overcome by bending the ends of the horizontal canes to the ground and fastening them there until the growth in the eyes at the base has become vigorous. This may be greatly helped by pinching back the two canes several times during the second season's growth, which will cause the lower buds to be very strongly developed.

These upright canes will bear fruit this year, and in the autumn the vine will present the appearance shewn in Figure No. 4.

Subsequent pruning will consist merely in cutting back each of these

alternate canes which were left standing to the top of the trellis are allowed to bear fruit on the lateral branches which will grow from each bud. As many laterals are allowed to grow and bear each one bunch of grapes as the strength of the vine will admit; all the others are rubbed off, and, after the first bunch appears, the lateral is pinched off so as to leave two or three leaves only beyond the bunch of fruit. The next year the upright canes that bore fruit the previous season are cut back to one eye above the horizontal arm, and a new upright trained up to bear fruit the following year. Thus the canes are cut back alternately.

The other system of training is called



Figure No. 4.

THREE-YEAR OLD VINE IN FRUIT.

upright canes to the first strong, plump bud above the horizontal arm, and training up a new fruit-bearing upright cane each year. Some cultivators cut back every other one of these upright canes to within one bud of the arm, and cut the others back merely at the top of the trellis. Those canes which are cut down to within one bud of the arm are not allowed to bear any fruit, but the new shoot is trained upright to the trellis to bear fruit the next year. The

the Arbor System. Stout poles are set in each row of vines midway between the vines. To these poles are fastened other and lighter poles, reaching from pole to pole, at such height from the ground as the size of the vines may require; also other light poles reaching across to the poles of the next adjoining row. Upon these horizontal poles light sticks are laid and fastened, forming a sort of lattice over the space between the first and second row, the third

and fourth row, the fifth and sixth row, and so on; thus covering each alternate space. Then the vines on the first and second row are trained upon this lattice; the vines of the first row running towards the second, and those of the second towards the first row,—those of the third towards the fourth, and those of the fourth towards the third row,—until each alternate space is covered with vines, trained horizontally upon a lattice or support of light poles. The height of this lattice from the ground is increased each year with the increasing size of the vines, until it reaches about seven feet from the ground, at which point it is permanently maintained. When the vines have reached this height, no branches, leaves or shoots, are allowed to grow within five feet of the ground.

The pruning in this plan of training consists in cutting back the previous season's growth to one or two buds, and occasionally cutting out the old wood, so that there may be a constant supply of young fruit-bearing wood, and the vine upon the top of the arbor not become too thickly matted, but always so thinned out that the air can circulate freely through the overlying foliage.

SUMMER PRUNING.

The only pruning that the vine should receive during its season of growth will be the nipping off of the ends of shoots that should be stopped, in order to throw the strength of the vine into the fruit. The idea that the leaves of the vine must be cut away to allow the sun to shine upon the fruit is wholly erroneous, and in practice leads to injurious consequences. The leaves elaborate the sap, and ripen the fruit. In order to do this office effectually, the leaves need to be fully exposed to the sun and air; and that they may be so exposed, fully and freely, all superfluous wood is cut away in the Spring, and thus the foli-

age and fruit kept in due proportion to each other, and to the space to be occupied. How much to cut away, and what to cut away, can not be taught by written instructions. Something will depend upon the vigor of growth of the variety, and can be learned only with pruning shears in hand. One principle lies at the foundation of all successful pruning,—that is, to replace the old wood with new, the fruit being borne on the wood of the current year, which grows from buds formed on the wood of last year. Only by so pruning as to keep a sufficient supply of strong, healthy, well-ripened young wood, may a crop of fruit be secured.

MANURES.

The best for a young vineyard not yet come into bearing, is well-rotted barn-yard manure. With most farmers there is not much danger of applying too much at this stage of growth, yet it can be overdone. Judgment must be used in this as in all things else; and the best judgment is always the result of practical experience. Some varieties, such as the Delaware, will bear considerable manure, not only without injury, but with positive benefit; while such as the Isabella and Diana can be over-fed to their injury. When the vines begin to bear, in addition to a moderate quantity of well-rotted barn-yard manure, ground bones, lime, ashes, salt, and even iron filings, if to be had, may be applied with great benefit. In soils deficient in lime there will be need of supplying lime in larger proportion; and as the country is remote from the sea, the use of salt, sown broadcast upon the ground, will, in some measure, supply the defect.

DISEASES OF THE VINE.

The most common disease in this country is the mildew, which attacks the leaves and fruit, and sometimes

extends to the young shoots. It is a parasitic plant, and I am disposed to believe that those fungoid or parasitic plants are not only not a disease, nor even the first cause of a disease in the vine, but only a consequence of disease. It is not in the healthy vine, growing in vigor and normal condition, that these parasitic plants find the conditions favorable to their development. It is when the vine has received some shock, has become in some degree unhealthy, or been placed in some condition that is abnormal, that these plants, ever ready to fasten upon enfeebled and failing vegetation, finding conditions more or less favorable to their development, begin to show themselves, and then *effect* becomes *cause*, and the sickening vine becomes more sickly by reason of the preying parasite. There are some vines of so delicate and feeble a constitution that they are naturally inclined to be unhealthy. Upon these we may expect to find the parasitic fungi known as mildew and rot. But they are not to be expected upon vines of a robust constitution, such as the Concord, and when they are found, we may at once conclude that there is something more to pay than any accidental so-called disease. Over-bearing is one great cause of sickly and enfeebled vines. Injudicious pruning is another, and probably the most common cause, for even over-bearing is the result of injudicious pruning. But most especially is excessive summer pruning and defoliation a fruitful cause of disease, mildew, and death. An abundant supply of foliage, well exposed to the action of air and light, are essential to the health of the vine and the ripening of the fruit. When mildew begins to make its appearance, it can be frequently prevented from spreading by dusting the vine, leaves and fruit, with flour of sulphur, and scattering it upon the ground under the vines. Better

still, if there be reason to apprehend mildew from the experience of previous seasons, to apply the sulphur before the mildew appears, and in this way, it may be, prevent it wholly.

The grape vine of Europe (*vitis vinifera*) seems to be unable to bear the extremes of heat and cold, drought and moisture, incident to our climate. In a short time it becomes so enfeebled as to fall an easy prey to the mildew, and it is found that those varieties of grape which are crosses with the European are more or less subject to this disease. Hence, in planting vines, especially in vineyard planting for commercial purposes, it is of the utmost importance to ascertain beforehand whether the vine possesses a robust constitution.

INSECTS.

There are some insects which are sure to be found upon sickly vines, very rarely and sparsely upon vines that are perfectly healthy. Of these are the Aphis and Red Spider. In some sections and in some seasons, however, there are other insects which attack perfectly healthy vines; and what is the worse feature in the case, some take particular delight in feeding upon the grape flowers, and so destroy the crop outright. The worst of these is the Rose Bug (*Macrodactylus subspinosus*). When these make their appearance in large numbers they make fearful havoc in the vineyard, eating first the flowers and then the foliage. There is but one method of effectually getting rid of this pest, and that is the simple one of catching and killing. It is easily and rapidly done, but it needs to be made



Fig. No. 5.

ROSE BUG.

a business of, and all in whose grounds they appear should join in a work of utter extermination. The annexed cut, Figure No. 5, will enable those who are not familiar with this little mischievous

beetle, to form an idea of its appearance, and so to recognize it if it should visit their vines.

There are a few other insect enemies which have been found in Canada preying upon the vine, but thus far they

ters of fruit. Figure No. 6, *d*, shews the perfect beetle. Should the beetles become numerous, so that they threaten serious damage to the vines, the following method of destroying them may be adopted :



Figure No. 6.

THE GRAPE VINE FLEA-BEETLE. (*Haltica Chalybea*).

a shews a leaf of the vine perforated by the larvæ, which are at work on the under side. *b* is the larva magnified, the line at the right indicating the natural length. *c* is the cocoon, and *d* the perfect beetle enlarged, the line at the left being intended to shew the natural size.

have not appeared in sufficient quantities to do much harm.

The Grape Vine Flea-Beetle is a little greenish-blue, jumping fellow, that should be carefully looked after whenever he makes his appearance, lest the number should multiply so as to become formidable. It feeds on the grape-vine in both the larva and the beetle state. Figure No. 6, *a*, shews the insect in the larva state, and its manner of feeding upon the leaves. At this time there is no difficulty in gathering and destroying them, but in the beetle state they are so active as to make it difficult to catch them. If anything they are more destructive in the beetle state, eating into the bursting buds, and devouring the entire embryo branch with its clus-

Take two pieces of common cotton sheeting, each being two yards long and half as wide; fasten sticks across the end of each piece to keep the cloth open, and then drench with kerosene. Give the sheets thus prepared to two persons, each having hold of the rods at opposite ends of the sheets. Then let the persons pass one sheet on either side of the vine, being careful to unite the cloth around the base of the vine; then let a third person give the stake to which the vine is attached a sharp blow with a heavy stick. Such a blow will, in nearly every case, jar the beetles into the sheets, where the kerosene kills them instantly.

This process, after a little experience, can be performed almost as rapidly as

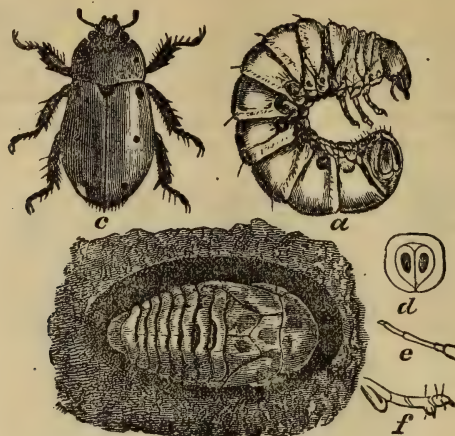


Figure No. 7.

THE SPOTTED PELIDNOTA. (*Pelidnota punctata*).

a represents the full grown larva, b the pupa, c the perfect beetle.

the persons employed can walk from one vine to another. The expense necessary is very trifling, and boys can do the work quite as well as men. Warm, bright afternoons are the proper times for this work to be done, and it should be performed faithfully every sunny day until the vines are out of danger. This mode of combating the beetle promises to be much more effectual than any other which has been hitherto suggested; for it can be used early in the season before the vines are seriously injured and before the insects have begun to multiply. In connection with the above, the remedies which have been recommended often should, if necessary, be used. These are as follows: First, all rubbish should be removed from the vineyard, and the stakes and trellises which support the vines be well cleaned of bark and splinters, so as to afford the beetles little chance for hibernating in the vineyard. Second, if the larvæ appear in great numbers, lime should be sifted over the vines.

The spotted *Pelidnota*, shewn in Figure No. 7, feeds on the leaves of the vine, and it is just as well to kill

the beetles when you find them, lest they should multiply sufficiently to commit serious damage, though I am not aware that they have yet been so numerous as to become seriously troublesome.

(To be continued).

THE CEDARS OF LEBANON.

The once famous and extensive cedar forest of Lebanon, according to a writer in the *Politische Correspondenz*, has dwindled down to the dimensions of a mere thicket, numbering about four hundred trees. To save it from complete destruction, and preserve it at least in its present extent, Rustem Pacha, the Governor-General of the Lebanon, has issued a special ordinance, containing a series of stringent regulations calculated to check, if not quite put a stop to the vandalism and carelessness of most travelers. It is expressly forbidden to put up tents or other kinds of shelter within the district of the trees, or to light fires or cook any provisions in their vicinity. No one is allowed to break off a bough or even a twig from the trees. It is forbidden to bring any beasts of burden within the district. Should oxen, sheep, goats or other pasturage cattle be found within the prescribed limits they will be irredeemably confiscated.

GRAPE GROWING AT LINDSAY.

BY JOHN KNOWLSON.

In February last I addressed a short note to you giving an account of my commencement of a small vineyard, consisting of sixty varieties of vines, planted in the spring of 1879, and intimated that I expected to be able to report my success with them by the end of the current year. Out of that number (averaging eight vines of each variety) thirty kinds fruited this season. I may mention that, when I made my selection of plants, my aim was to get early and hardy sorts, with the exception of four or five late-ripening varieties, which I determined to risk as an experiment. Out of the thirty kinds that fruited, twenty-five of them were quite ripe by the middle of September, indeed it was on the fifteenth that we had these twenty-five pulled and housed, and a few of these had been ripe a full week previous, viz.: The Champion (a variety which has been introduced into the Province of Quebec under another name, viz. "Beaconsfield"), the Hartford, Tolman, Janesville, Telegraph, Massasoit and Eumelan. Of the late kinds, the Concord, Clinton and Agawam ripened about the twenty-fifth of same month, and the Diana and Cynthiana the first week in October. Of the Cynthiana, the great red wine grape of Missouri, the bunches and berries were very small, and the berries generally throughout the vineyard were, I think, smaller than they otherwise would have been but for the long-continued drought through a great portion of the summer months. If we had had an occasional copious rain-fall during that extremely hot and dry period, I imagine the fruit would have been larger; whether that long continuation of parching weather had the effect of producing early ripening, I do not undertake to determine; possibly it had, so that, taking into consideration the exceptional character

of the season, I do not pretend to decide that the present year's production is a fair test of the results that may be expected in the future; however, I am thoroughly convinced that the ground on which my vines are planted is well adapted to their cultivation. The surface soil is a clay loam, mixed with numerous small roundish lime-stones, from twelve to fifteen inches in depth, resting upon a sub-stratum of the same sort of stones, say from an ounce to four or five pounds weight, five to six feet deep, with little or no soil mixed through them.

I planted about 800 more vines last spring, principally Concord, with a view to make a fair and cheap drinkable wine. I have had several varieties of grapes ripen in Lindsay four seasons out of five for the last eighteen years, although grown on a hard clay soil; but the vines I have been referring to above are planted about ten miles to the north of here, and are about fifty miles north from the town of Port Hope, situate on the shore of Lake Ontario, at which latter place, as also about the neighbouring Town of Cobourg, the attempt to grow out-door grapes has not been successful, although the soil seems quite well adapted to the purpose.

A few of the varieties I have planted I should have no desire to repeat—the Champion for one, as I consider it of very poor quality, and if the people of Quebec have a relish for it I for one do not envy them their enjoyment of it; the Hartford is not much better, besides it is objectionable on account of dropping its berries as soon as ripe; the Janesville is only four or five days later than the Champion, and I think of better quality than either it or the Hartford; the Massasoit I like if pulled at the proper stage of maturity; if

allowed to hang too long on the vine it loses its flavor, particularly should wet weather prevail at the time.

I have made a few gallons of wine each year for the last five years from the Clinton, and find it improves very much with age, and thus makes a wine not to be despised. I would grow more of the Clinton were it not that the robins are so destructive on the crop; it is impossible to protect the fruit until it gets properly ripe; they also devour large quantities of strawberries and other small fruits, and I have never discovered that they are of much value in destroying pestiferous insects. It is not at all uncommon to find caterpillars and insects of different kinds swarming on the same tree with the robin's nest, while hatching and rearing its brood, and not one of the insect tribe disturbed.

I may mention here that the Rev. Mr. Logan, of Fenelon Falls, which is about six miles still further north than my plantation, has been quite successful in ripening several varieties of out-door grapes, and the late Mr. Hooey, of Rosedale, a few miles still farther north, grew fine specimens for several years in succession. I visited his place in 1879, and found his soil, both surface and sub-soil, quite similar to mine.

I may refer to another fact which serves to give me confidence as to my future success, viz., that the wood of nearly all my vines was hard and thoroughly matured by the 25th of September, and a few varieties even much earlier.

I am persuaded that there are large areas of land in the Counties of Victoria and Peterborough well suited for the cultivation of the grape, and I am sanguine enough to believe that Canada ere long will be found to be a wine producing country, and I hope to see efforts made to make it such; for if we desire to do away with the common use

of bad whisky and other spirituous compounds, a substitute must be provided; we must encourage by every legitimate means the production of a wholesome, exhilarating, non-inebriating beverage made from the juice of the grape; cheap, pure, light wines to be used by all classes, young and old, as it is in France, where amongst the rural population, as well as that of many of the large towns, a drunken person is a *rara avis*. Here let me say that although I by no means undervalue the work that has been done, and the great efforts still making by temperance advocates (notwithstanding, to my mind, some very illogical arguments often escape the lips of the most sincere pleaders of the cause), for strict temperance has long been and still is my motto, yet I am persuaded that if such wines as I have alluded to can be produced and become the common beverage, as in France and other portions of Europe, it would prove the capsheaf to all the temperance movements that have yet been inaugurated. I have but little faith in the doctrine of Prohibition of the spirituous liquor traffic, unless a refreshing and harmless substitute is provided, neither do I concur in a decision that was recently given by a debating club a few miles from here, "That the moderate use of liquor is a sin." In my collection of vines I have four or five white varieties, one of which is the Elvira, said to make a good white wine. From its manner of fruiting this season it has not proved all I was led to expect from it; the bunches, though numerous enough, were small, and the berries so closely compacted that their size was not half developed, besides they ripened unevenly, a few of the largest on each bunch taking the lead and either cracked open or the skins were punctured by wasps, which seemed to confine their depredations to this variety,

besides many ants joined them in the feast. This is my experience with the Elvira so far; they may do better as the vines get older. Any of the white kinds that I have proved so far has not come up to the standard of what I desire. In quality the Rebecca pleases me best. My Delawares, planted with the others in 1879, have not borne fruit yet, and seem slow growers, although I allotted them, as was necessary, the richest part of the soil; the six Ionas I planted in the spring of 1880 have given me as yet no proof of what they will do in the way of ripening; my Prentiss, Duchess and Lady Washington were only planted last spring, so that I am unable to speak for them, and am now patiently waiting for a few vines of the Niagara, which is generally expected to eclipse all competitors. I hope it may. All Rogers' Hybrids I have planted give promise of good results. My first planted vines are eight feet apart in the row, and the rows nine feet apart, and my trellises are constructed with four horizontal No. 12 galvanized iron wires, placed about eighteen inches asunder and fastened with wire staples to the sides of cedar posts, which were cut eight and a-half feet long and about four inches and upwards in diameter, sharpened as a stake at the thick end, and one placed midway between each vine; a hole being first prepared with a crow-bar, and the post driven down two and a-half feet with a heavy maul, the driver standing on a raised platform; these were put down in 1879, and so far have shown no signs of heaving by frost, but, should they ever do so, a little pounding occasionally will put them right. The posts at the end of each row are braced, and small holes bored through for the wires to pass through where they are fastened to the posts, but at one end of each row only, by bringing the end of the wire half round the post and,

meeting the wire on the other side, twisting them together; at the other end of the row the wires also pass through similar holes in the post, and here I use a strip one inch and a-half square, ripped out of one and a-half inch dry oak plank, thirteen feet long, each length cut into three equal parts of four feet three inches each; through this strip is bored four small holes corresponding in spaces with the four holes in the post; these strips are placed vertically on the outside of the post, first placing three small wedges, four or five inches in length, and from an inch to an inch and a-half thick at the large end, between the strip and the post at convenient distances; the end of each of the four wires is then brought through the holes in the strips and tightened with the stretcher or the claws of a good hammer, a turn taken half round the strip to meet the wire on the opposite side and twisted together. This method I have adopted to provide against contraction and expansion of the wires; possibly there are simpler and better plans for this object, but I have had no opportunity of making their acquaintance. In the fall I slacken or remove the wedges altogether. When the wires again require tightening, all that is required is to give a few taps of the wedges. I intend in future to set my posts twelve to sixteen feet apart.

I am desirous to plant eight or ten acres more, in addition to my present three acres, but find myself too far advanced in years (now bordering on four-score, for nearly sixty-five of which I have made Canada my home) to undertake such an extension. However, between now and next spring I intend looking out for a practical vine-dresser and experienced culturist, or one disposed to invest some capital, to join me in carrying out the project to the desired extent.

PRESERVING PLUMS FROM THE CURCULIO.

BY J. W. JOHNSTON, CAMPELLBELLFORD.

Last spring, as usual, I had a prospect of a large crop of plums, if the curculio would only let—say half of them alone. For years back I tried every remedy I heard of, including smoking with coal tar, jarring trees on sheets, &c.; but with very indifferent results, as every one who has tried it knows that large trees can not be successfully jarred.

So last spring I resolved to put in practice a theory I have had in my mind for a long time, viz.: to coat the plums over with some substance that would not in any way injure the fruit, and yet be impervious to the attacks of the curculio. I had not long to wait. The fruit was no sooner set than the curculio began to work in a lively manner. If I meant to do anything I had to hurry up. Well, early in the morning I went out with a pail of dry air-slaked lime and threw it thoroughly through the trees, using up two pailsful on six trees about seven years planted. Every leaf, twig, and plum was thoroughly coated with lime. When the sun dried the dew off, the trees were dazzling white. This coating I repeated three times, as winds and rains took it off. The result was the trees were overloaded. The curculio would not bite the lime off to get at the plums. They could be seen running along the twigs during the day with their long noses elevated at an angle of 45 degrees, while on the other trees not so treated they were positively travelling with their noses down. The lime did not injure either the fruit or the foliage. I had about one hundred bearing trees, and only those limed escaped; on the latter not a plum was stung. That this remedy will prove successful wherever faithfully applied, I have not the slightest doubt; but if

he is allowed a day or two the start, the plums will be all stung before you know where you are. Before the fruit is ripe the wind and rustling of the leaves will have taken all the lime off the fruit. As soon as the curculio egg-laying season is over, say four weeks after fruit sets, the trouble is ended.

Remedy No. 2 is another plan I had thought of for some time, but have not yet tried it, as I found the first so successful. It would consist of a balloon-shaped net of any cheap material, such as cheese-bandage cloth, costing four to six cents per yard; and as each net could be used several seasons, it would not be expensive. It would only require to be on the trees about four weeks, and would save the entire crop. One side of the net would require to be left open, with small hooks (and eyes or not) sewed down the edge to close it when the tree was enveloped, and then closely tied at the bottom to prevent any curculio effecting an entrance. The trees would require to be well jarred first to make sure of none of the enemy being left within. The cloth netting might be made very durable by soaking in oil of some kind. I hope the members of the Ontario Fruit Growers' Association will try one or both of these remedies next spring and report success.

REPORT ON TREES, &c. RECEIVED.

I submit the following report of the trees, &c., received from the Fruit Growers' Association, with the results:

1872. McLaughlin Plum grew well, is a fine tree, in good bearing. This plum as a dessert plum is in every respect first-class; of the finest flavor, but too tender to send to market except in small baskets packed like strawberries.

1873. Grimes Golden Pippin—Tree dead when it came; evidently had been badly heeled in and winter killed.

1874. Downing Gooseberry and Salem Grape—Both very satisfactory. The gooseberry is perfectly free from mildew, bears well, and in my opinion is one of the best small gooseberries I have seen, being nearly double the size of the Houghton Seedling, and just as hardy and prolific. The Salem Grape is so well known much need not be said. It ripens well here, and we esteem it one of the very best out-door grapes for the table, being sweet and luscious. The vine, like most of Rogers' Seedlings, is a very strong grower.

1875. Swayzie Pomme Grise Apple and Flemish Beauty Pear—The apple tree was very poor, being nearly gnawed through by mice when it came; with care it has lived but not borne any fruit yet. The Flemish Beauty Pear is hardy. The fruit needs no description, but with me it has a tendency to fire-blight. There is no pear has succeeded so well with me as the Buerre d'Anjou; it passed last winter—the severest we ever knew here—without injury, when almost every variety were hurt. The fruit is first-class, and ripens at a season when fruit is getting scarce in the market.

1876. Glass Seedling Plum—A hardy tree and good grower. The plum, being late, is a good market plum; preserves well.

1877. Diadem Raspberry—Strawberries—The plants received were rubbish; the raspberry a shoot broken off an old root, and two strawberries, apparently third or fourth runners. Neither grew, as might have been expected.

1878. Burnet Grape—The vine received in good order has grown well, fruited a few bunches last year, but not sufficient for a test. The grape does not appear to set its fruit well,—something like the Creveling and Eumelan. The vine being now strong, this year will probably test its quality in that

ect as well as the flavor and time of ripening.

1879. Arnold's Ontario Apple—Received in good order, has grown fairly but of course not yet fruited.

1880. Saunder's Seedling Raspberry. No. 72—A good plant, made good shoots this year. Will not be able to form an opinion of the fruit till next summer.

1881. Dempsey Potatoe—A strong grower; the excessive drought this season, causing a failure of crops in most places, prevents me giving an opinion respecting their productiveness or quality.

Yours respectfully,

GEORGE ELLIOTT.

THE GRAPE.

(From the address of the Hon. Marshall P. Wilder, President of the American Pomological Society, at its last session, Sept. 14, 1881.)

In the order of discussion I have placed the Grape first on our roll. No other fruit, unless it be the strawberry, is now attracting so much attention; and perhaps no other, if we except the apple, is of more importance as a source of revenue, or as an article of luxury for our tables, as the Grape. No other country possesses such a vast extent of territory, or possibilities for its successful culture, and in no other section of the globe is there, at the present time, such encouragement thereto. In fact, it seems as though Providence had designed many parts of our continent especially for its cultivation. The Scandinavians, as the Sagas have it, eight hundred years ago, here found the vine growing so abundantly that they gave to our coast the name of Vinland. Champlain, in his voyages on our coast about five hundred years afterwards, saw vines in abundance. The Pilgrim Fathers, at Plymouth, found grapes, "white and red, and very strong," and should the phylloxera con-

tinue its devastation in the vineyards of the Old World, our country may become the most favored vineland of the world.

In the whole circle of our pomological progress there is no fruit which excites so much enterprise and interest, whose culture is being so rapidly extended, or which gives so great promise of success as that of the Grape; and should this same enterprise continue for fifty years to come, we can hardly estimate its value as a revenue in our country. All localities are not equally suited to its growth, but where our wild species are found, other new and improved sorts, produced by hybridization, will be found equally well adapted. With every succeeding year new and valuable varieties are coming to notice, either adapted to special locations or purposes, or for general cultivation. Nor is it too much to hope that ere the close of this century, with our present zeal and skill, we shall produce varieties that will rival the choicest kinds of the most favored climes. Even now we have those which compare favorably with our foreign varieties, and we believe the time is not distant when the aroma of our native sorts, now so much despised by some, will become, when chastened down as it has been in the Brighton, Duchess, Rochester, and Monroe, one of the excellent characteristics of our American grapes.

How potent the influences of this art! Little did Mr. Bull think what a blessing he was conferring on the world when he sowed the seed which produced the Concord grape, the mother of so many improved varieties. See the number of white varieties (not to speak of others) which have been produced mostly from this: the Martha, Lady, Pocklington, Lady Washington, Hayes, Ann Arbor, Prentiss, Duchess, and still another soon to be within our

reach, which is heralded like Niagara herself as one of the wonders of the world.

The illustrations of this improvement are manifested in the numerous seedlings obtained by crosses on the Concord, some of which are of a very remarkable character, possessing great size and beauty, and whose vigor and productiveness are declared to be even greater than that of their mother. We see this improvement also in the crosses of a wild Grape with the foreign species by Rogers, as shown by the amelioration of the native aroma in the Barry, Wilder, and Lindley, the last named, like the Jefferson of Ricketts, possessing a peculiar rich flavor, which might, with propriety, be denominated, and may yet be distinguished as the Muscat of America. Nor do I doubt that we shall in time produce varieties which will compare favorably with, and perhaps be equal in size, beauty, and excellence, to the Cannon Hall, or other Muscat, now so highly praised for their peculiar aroma. The Pocklington, in size and beauty, is an approach to this. Nor is it unreasonable to suppose but we may have a Grape, if we have it not now in the Duchess, that is as well adapted to exportation as the White Malaga, and of much better quality. What has been done can be done again. Nature has in her laboratory infinite stores of the same elements which have produced our finest fruits, and we have only to knock at her portals and pronounce the SESAME, when she will open to us the secrets of her wonder-working power. These predictions may be considered as the fantasies or vagaries of imagination, or as indications of a too ardent desire for progress. No, no, neither are they the results of chance. They are founded on those immutable laws which govern all sciences, in the control of mind over matter, and the power of man to assist nature in her

onward march to higher and higher states of perfection. That we shall possess such improved varieties as we have predicted we have no reason to doubt. Our country is large and varied in climate and soil. Though we of the North cannot expect to grow tropical fruits—nor may we grow a Grape of the excellence of the Black Hamburg suited to out-door cultivation—yet we can produce fruits of great importance to ourselves, and of inestimable value to other portions of our country, as we have seen in the Baldwin, Rhode Island Greening, and Roxbury Russet apples, in the Diana, the Concord, the Rogers Grapes, the Bartlett pear, and other fruits which have been sent out from New England.

FARMERS AND SMALL FRUITS.

In travelling about the country among the farmers I have often wondered why so few of them raised small fruits. Not one in five, on an average, tastes any kind of small fruit of his own growing from one year to another. Formerly a few currant bushes struggled with the grass and weeds in the fence corners and gave an abundance of small but wholesome fruit, but, with the worm as a foe, the bushes were unequal to the contest; the grass waves triumphantly over their dead remains, and the farmer is entirely without small fruit. Why this great scarcity? Certainly not because farmers do not love fine fruit. Ask any one of them into your plat, and you will be surprised to see what capacity he has for stowing a large quantity in a small space. Nor is it because he is too stingy for he will send the boys and girls, and even go himself, miles away to a few straggling wild bushes to pick a few poor berries that cost him two or three times as much as it would to grow those very much better on his own farm.

There are three reasons to which we can attribute this lack of small fruits

on the farm: First comes carelessness. The farmer sees the fruit in its prime and resolves to raise plenty for his family, but before planting time comes he has partially forgotten his good purpose, and lets the proper season go by. Second, the mistaken notion that prevails as to the great labor and expense of growing what would be needed to supply his family. The last and best reason is that the Farmer does not appreciate the value of the small fruits to his family, both as food and as medicine. When he looks at the early strawberry blushing and nodding amid the dew-laden leaves, and his mouth waters for a taste, he does not realize that nature is yearning within him for the acid contained in the fruit, to help relieve the system from the accumulations of winter, and prepare it to endure summer's heat. He does not consider that each of the fruits in its season contains some principle that is just adapted to the wants of the body at that time, and that many times the free use of each would save large amounts in doctor's bills, as well as much suffering, and many times the life of a beloved one. The average American farmer is not yet educated up to the full enjoyment of his high calling and God given privileges. He does not yet realize that he is near the fountain-head, and is entitled to partake first and of the best of everything that grows, and that when he neglects to provide himself and family with these health-giving necessities he is culpably responsible for the bad results.

To correct these false impressions, and to cause him to provide and enjoy these, his rights as the tiller of the soil, would be conferring on himself and family a great and lasting benefit. One acre of good land, properly divided and cultivated, would furnish any ordinary farmer's family all the fruits, fresh and canned, needed from the earliest ripen-

ing of the strawberry to its coming again. To what other use could an acre of land be put that would add so much of health, comfort and enjoyment. In planting, the farmer should not fall into the too common error of using small beds or plats here and there scattered about, but let the rows run the whole length, and so place them that the main cultivation can be done with a horse. This will save much hard work and valuable time in hoeing. Another fact he should remember: "The easiest cultivation is thorough cultivation" — no half-way business. It is much easier to keep the land entirely clean than to keep it half overrun with grass and weeds. He should remember this acre is worth two in corn or potatoes and give it good care, allowing nothing but fruit to grow. Of kinds, it should contain at least strawberries, raspberries (red and black), currants, blackberries and grapes.—*Rural New Yorker*.

JELLIES AND PRESERVES.

CURRANT AND GOOSEBERRY JELLY.—

The currants are beginning to ripen, and those housekeepers who want nice jelly must take them in time before the juice begins to grow thin, else they will have trouble to make their jelly "come." Look them over carefully, crush and strain through a jelly-bag, then measure the juice, and for every pint allow a pint of best white sugar. Put the juice over to boil in a porcelain-lined kettle, and boil twenty minutes or more, according to quantity and thickness of the juice. It is better to boil little juice at a time if you want your jelly very nice, as the less time it is over the fire, the lighter-colored it will be. Skim off carefully all the refuse that rises to the top. Put your sugar in the oven and heat it hot, being very careful not to scorch it; then add it to the boiling juice and boil three or four

minutes, or until a few drops taken out on the tin will make jelly readily, then turn into jelly-cups and set away in a dry, cool place. Gooseberries make a nice tart jelly, delicious with meat. Pick the berries clean, cover with cold water, and boil till soft; strain through a jelly-bag, then proceed the same as in making currant jelly.

Though I am fond of canned fruit (when it is properly put up and comes out from the can fresh and free from mould or must), there are some fruits which, for variety, I like "done up" in the old-fashioned ways, and as I have some receipts which I think will please, I give them for the benefit of other housekeepers who like an occasional dish of preserves, spiced fruit, jam or marmalade.

TO PRESERVE PLUMS.—Look them over and pick out all that are imperfect or unsound. Make a syrup of clean, brown sugar and clarify it. When perfectly clear and boiling hot, pour it over the plums. Let them remain in the syrup two days, then drain it off, make it boiling hot, skim it and pour it over again; let it remain another day or two, then put over the fire and simmer gently till the syrup is thick and rich. Use one pound of sugar to each pound of fruit.

PEACH BUTTER.—Pare and stone good peaches and cut them in quarters. Cook them two hours; then to each pound of fruit add half a pound of sugar, and cook two hours longer, stirring almost constantly.

SPICED CURRANTS.—To 5 lb of fruit, add 3 lb of sugar (either white or good clean brown), 1 pt. of good cider vinegar, 2 large tablespoonfuls of ground cinnamon, 1 tablespoonful of ground cloves, and 1 tablespoonful of ground allspice. Heat all together in a porcelain-lined kettle; skim out the fruit, and boil down the juice till it will make jelly; return the currants, and let it

boil up once ; then pour into your fruit jar. When cold, tie or paste a thick paper over the top, and set where it is dry and cool.

SPICED GRAPES.—Get ready 5 lb of fruit, 4 lb of sugar, 2 tablespoonfuls each of cinnamon and mace, and 1 pt. of the best vinegar. Boil the sugar, spices and vinegar together about one hour, or until thick. Heat the grapes and rub through a colander. Add the syrup to the fruit, and let it boil up once.

CURRENT PRESERVES.—To each lb of fruit, add one lb of good white sugar, and set it on the stove. Let it come to a boil ; skim out the currants, and boil the syrup down till it will make jelly ; put back the fruit, and dip into bowls. When cold, paste paper wet with white of egg over the top, and set away.

CRAB-APPLE MARMALADE.—Boil the apples in a kettle till soft, with just enough water to cover them. Mash and strain through a colander ; then to a pound of fruit take three-fourths of a pound of sugar, and boil half an hour.—*SUSAN BUSYBEE, in Country Gentleman.*

HARDY PEACHES.

In such portions as are favorable to the growth and bearing of the peach, we have not discovered much difference in the endurance in winter of the different varieties, the temperature rarely passing lower than 12° below zero. As the shoots of most of the sorts are never winter-killed, no material difference can be seen in the hardiness of the varieties. But in many places at the West, where the growth is more luxuriant, the ripening of the young wood not so perfect, and where the thermometer often sinks to 20° below zero, the case is different. D. B. Wier, of the *Prairie Farmer*, says the past winter was very useful to the fruit-grower in indicating hardy

sorts for future propagation. He mentions two well-known peaches, both great favorites, known as Crawford's Early and Oldmixon Free. The Crawford is large, handsome and popular, and sells at the highest price, but the tree and fruit buds are easily injured by severe cold. The Oldmixon, although not so large and handsome, bears in that State four bushels of fruit to one borne by the Crawford, and notwithstanding the former sells at a lower price, it gives the grower twice as much money tree for tree. The Crawford bears well in good seasons when prices generally are down, and the Oldmixons sell at much higher prices in scarce years than the Crawfords in the plentiful seasons when they bear. For this reason it is recommended in all localities where this difference occurs, as the most profitable and worthy of more extensive planting.—*Country Gentleman.*

BLACK RASPBERRIES.

We expect to add to our raspberry plantation by setting out this fall twenty-five acres more of black caps, and these will be in about the following proportions : Three acres in Thornless, five acres Tyler, five acres Mammoth Cluster, twelve acres Gregg. This gives good pickings, first to last. The Davidson Thornless are so very early that we get twelve to fifteen cents per quart for bulk of crop. The Tyler is very near as early, and yields larger and a much longer crop, taking the place of the Doolittle—which sort is so much affected by the rust the country over. The Tyler is a rank grower, and has never shown rust with us ; and were we to be confined to but two black raspberries for market purposes, we should choose Tyler and Gregg—though the Mammoth Cluster is needed to fill in well between the two, as the Tyler is about gone when the

Gregg gets into good picking, and such pickings we never saw in the black raspberry line. The bushes are literally covered over with clusters.

Our best pickers would average ten to twelve quarts per hour of the Gregg. The bush is a rank grower and perfectly hardy with us. With black raspberries dried, quoted at twenty-seven to thirty cents per lb., we see no danger of overdoing the business for years to come.—A. M. PURDY, in *Fruit Recorder*.

THE NEWER STRAWBERRIES.

FINCH'S PROLIFIC.—Originated in Southern Ohio, and thought to be a cross of Russell's Prolific with Wilson. We have only tested it one season, but are strongly impressed with its value as a very productive and firm market berry; plant strong and healthy; fruit large, good form and color; medium quality, very firm; think it should be tested by every one growing fruit for market.

BIDWELL.—A very valuable early variety; plants strong and vigorous even on light soil; very productive, fruit of large size; long and conical in shape, with an occasional coxcomb berry; color, a glossy crimson; superior quality.

MARVIN.—A cross between Wilson and Jucunda. It will not thrive on light, dry soil; on heavy clay soil it is of great value; fruit of large size, dark red, very firm and solid, good quality; and what is best of all, the very latest to ripen.

MOUNT VERNON, OR KIRKWOOD.—Originated in Southern New Jersey, and said to be the most profitable market berry ever grown there. The plant is one of the most vigorous on our place; very productive, fruit of medium size and quality; moderately firm; ripens very late, and valuable for market on that account.—*Fruit Recorder*.

MOORE'S EARLY GRAPE IN THE PROVINCE OF QUEBEC.

The Fruit Committee of the Montreal Horticultural Society, in the Report for 1880, say of this variety that it is fully equal in quality to the Concord, that it ripens before the Hartford Prolific, or as nearly as possible with the Champion, known there more recently as Beaconsfield, but quite surpassing it in flavor, and add, "we believe this variety will prove of great value to our Province on account of its early ripening, and because, as we are informed, the vine is vigorous and healthy. It has been fruited in Ontario, and is there much esteemed. The Massachusetts Horticultural Society, after testing this grape for several years, awarded it a prize of sixty dollars as the best new seedling grape."

THE WILDER GRAPE IN THE PROVINCE OF QUEBEC.

At the recent exhibition of the Horticultural Society of L'Islet County, Province of Quebec, latitude 47° north, Mr. Auguste Dupuis exhibited this grape, grown by him in the open air, perfectly ripe and of first quality. We are fully persuaded that this grape will prove to be one of the most valuable of the Rogers varieties in our climate.

PACKING GRAPES.

I wish to offer a few suggestions to the grape growers in reference to packing grapes for shipping to market. The manner of packing has much to do with the condition in which they arrive in market, and the condition has much to do with the price obtained.

In the first place, grapes should never be gathered when wet with dew or rain. The best method that I have tried for gathering grapes is to take a sharp pair of shears (pruning shears answer well) or a sharp knife with hooked blade: take hold of the bunch with one hand and cut the

stem of the grapes with the knife or shears held in the other hand, and take off all green and decayed berries, then lay in carefully in a basket, then proceed to the next; when the basket is full, carry it to the place of packing, which should be under roof; the next operation is to pack them in boxes, which should be both light and strong; twelve by eighteen inches, and four or five inches deep, is a convenient size and will hold from sixteen to twenty pounds if properly packed; to do this right it will take some experience.

I would recommend that the box be set on a table of convenient height, having the back end of the box elevated three or four inches by placing something under it, then commence at the end next to you and lay the bunches in carefully, pressing them together gently, but not hard enough to break the berries. When the bottom of the box is covered one layer deep, commence at the front again, put in a second layer, placing the larger bunches in the low places and the smaller bunches on the high places, thus keeping them as level as possible; proceed in this manner until the box is full, being careful to have the box as level as possible when done. Cutting bunches to fill up cavities is not a good practice, as large bunches sell best.

When the box is full set it aside and proceed to fill another, and so on until all are full. The boxes thus filled should be allowed to stand until the stems of the grapes are wilted and become pliable, which will take from six to twenty-four hours; then take a board and cover the box, placing one hand under the box and the other on the cover; then set the box on end holding the cover securely in its place with one hand, then shake or jostle the grapes till they settle compactly together, which is easily accomplished after the stems are wilted; this will cause a cavity at the upper end of the box, which should be carefully filled with grapes that have had stems wilted in order that they may pack closely.

Great care should be taken to avoid rubbing the bloom off the grapes, as it injures their appearance, and it is thought they will not keep so well. Care should be taken to hide the stems of the last layer and have the berries look even or level on the top. Grapes should not be

allowed to stand in the sunshine after they are gathered. Grapes packed according to the above directions can be transported a long distance without injury.—E. P. BOTHWELL, in *Fruit Recorder*.

THE CORWIN'S COLLECTIONS.

The collection of specimens and relics brought back from Arctic regions by the Arctic cruiser Corwin is described as large and interesting. Lieutenant Myrick and Doty have accumulated a rare assortment of models of weapons and boats used by the tribes inhabiting the extreme northern limits of the habitable portion of the globe. These models include boats of various shapes and character, hunting weapons, pipes, bird traps, nets and other trinkets which would prove invaluable to a collector of the curious in any portion of the world. Dr. Ross, of Washington, who accompanied the expedition, has a collection of very rare specimens from the Alaskan and Siberian coasts, as well as from Herald Island and Wrangell Land. Among these are specimens of the flora, vegetation, soil, and minerals of the newly acquired territory, New Columbia. Among the flora may be seen some of the most delicate and beautiful flowers, and while all are void of brilliant colors, the leaves and blossoms, all of delicate tints, are very beautiful and extraordinarily curious as coming from an unexplored land so close to the North Pole. The grasses are also delicate, and resemble both the common bunch and "foxtail" variety of California and the blue grass of the Eastern States. The rock from Wrangell Land is a coarse blue sandstone, a fine slate, and some pale drab sandstone, all good building material. The specimens of coal from Cape Lisburne, on the north coast of Alaska, are of a deep black color, soft and bituminous. It is easily ignited, and emits a strong sulphuric odor. From Herald Island the Corwin brings some fine specimens of granite, which is susceptible of a high polish. It is gray in color, and resembles the granite of Lake Superior and the coast of Maine. Among the curiosities in the possession of Mr. Haloran, the boatswain of the Corwin, is the tooth of a mammoth found upon the shores of Siberia. It is as large as a 20-pound can-

non ball, and being petrified, is equally as heavy. The collection of curiosities brought down from the Arctic by the Corwin is, perhaps, the most interesting of any brought to San Francisco.

A NEW GARDEN IMPLEMENT.

Mr. Oren Stoddard, of Busti, N. Y., has patented a combined hand seed planter and fertilizer distributor, which has a very perfect action and separates the fertilizer from the seed in the ground. In this device, a central box in which phosphate or other fine fertilizer is placed has combined with it outer side boxes for reception of the corn or other seed. Followers terminating in or connected with a handle above, serve, by a suitable construction of the interior of the boxes, to discharge, as they are thrust downward, the fertilizer and seed in measured quantities into the ground, the same passing out through or between elastic plates, which form the necessary openings in the soil, while the bottom of the boxes act as a stop to insure the seed being planted at a uniform depth. By this construction the seed for each hill will be divided, and the fertilizer will be deposited in the space between the parts of the hill without being in contact with the seed, so that the seed will not be injured or killed by the fertilizer. Connected with the fertilizer follower are levers, having attached covering plates which, as said follower is drawn upward, force the soil into the openings in which the seed and fertilizer have been deposited, and cover the seed.

—*Scientific American.*

THE TOLMAN-CHAMPION-BEACONS-FIELD GRAPE.

This grape originated within two miles of where I now sit writing, some twelve or fifteen years ago, and was first named the Tolman. After having proved worthless under that name, certain Rochester parties bought plants of Wm. Day, of Syracuse, and re-named it the Champion, and by a series of misrepresentations they have succeeded in scattering it broadcast over the country. It has been especially recommended for the latitude of Canada, but I am pleased to read that one Canada

gentleman, at the meeting in Boston, reported that it could not be sold at one cent per pound in the streets of Montreal.

Some of our Canada brethren—evidently encouraged by the success of our Rochester friends—have again re-named it, and this time it is the Beaconsfield. What success it will have under this last name remains to be seen, but name it as you will, it will still remain a worthless thing. There have been more lies told about this grape than about any other fruit that has been offered to the public in the last twenty years, and it is now time that these false statements should be discontinued.

It is true that a very few grape-growers have made it pay, by selling it to people who had not yet learned its worthlessness, but this was only a transient profit. A few years ago this grape sold in our market at fifteen cents per pound wholesale, but from year to year the price declined, and this season the growers of it were peddling the fruit from house to house at two and three cents per pound. Now they find themselves burdened with vines that are practically good for nothing. When will people learn that it pays best, in the long run, to grow good fruit? If I have been rather severe upon this subject it is because, in my opinion, plain talk is best in this particular case.—NELSON RITTER, in *Country Gentleman*.

CANKER WORMS.

This is how I got rid of them on four hundred apple trees: I took one barrel and a half of tar, warmed it in a pail with half rain-water, and applied it at about four o'clock in the afternoon with a large paint brush. I made a ring around the body of the tree, about half way up to the limbs, and repeated it every day for 31 days, having commenced on the 3rd of April.

The habits of these destructive worms are peculiar. The miller that lays the egg for the worm commences coming out of the ground as soon as it begins to thaw in the spring, and immediately crawls up the tree and lays its eggs in and on the buds, which hatch as soon as the tree begins to leaf, when its work begins. These millers are hardly ever seen in the day-time, and they never climb the tree except at

night. From a half an hour after sundown they appear to pop out of the ground and start straight for the tree. The female has no wings and gets stuck in the tar, and that is the end of it.

I had a man who tarred the four hundred trees in about two hours; some of the trees had been only four years set out. The tar was applied to the bark. No harm resulted from it to the trees, but the worms were exterminated. This was done some six years ago. My trees had been stripped for five years of fruit and leaves, but not a canker worm has been seen since.—C. W. PALMER, in *German-town Telegraph*.

LACKAWANNA CAULIFLOWER.

This is a new, early, large heading variety, which was first offered by Mr. Tillinghast, of Pennsylvania, last spring. Although the past season has been extremely unfavorable to the growth and development of cauliflowers, which require more moisture than cabbages, the reports received thus far from this have been highly satisfactory. A gardener residing upon a tract of Long Island which annually produces thousands of barrels of cauliflowers for market, writes that this proved one of the most profitable market varieties introduced. It is somewhat later in the season than the Snowball and Erfurt varieties, but grows much larger, and is a remarkably sure header. It should be sown very early so as to mature before the summer droughts come on.

SHEEP AND TREES.

The wash recommended by me last summer is a sure preventive of sheep barking or gnawing fruit or any other trees. Take soap, the dirtier and more offensive the better, and make a very strong suds; dissolve one-fourth pound whale-oil soap in every six gallons, and into this stir sheep-manure until it is as thick as good whitewash, with a brush or old stub of broom, and with this mixture wash the trees as high as the sheep can reach, and no sheep will come near enough to rub against them for at least two months, the time depending upon the amount of rain. We keep the mixture handy and repeat

the application as often as necessary, usually not more than twice in a summer. Sheep running among fruit-trees should have plenty of good, fresh water; it is thirst that first induces them to gnaw the bark, but after they have once got a taste they eat because they like the bark. The above mixture will effectually keep them away, and besides is a very good application for the health of the trees, keeping the bark smooth and fine, and killing any insect that it comes in contact with.—J. S. WOODWARD, in *New York Tribune*.

FORCING THE LABURNUM.

The pendant spikes of the Laburnum would come into excellent play in many forms of floral decoration. The London *Gardener's Chronicle* says of an attempt to force it:

"Among forced flowering plants, the Laburnum takes a prominent position, though it is not so generally seen grown in this fashion. Geo. Buck, the gardener at Castle Ashby, finds it invaluable in early spring, and his forced plants yield him splendid wreaths of yellow flowers, which are much prized for house decoration. Late in autumn the plants are lifted from the open ground, and the roots thrust into suitable sized pots *sans ceremonie*; but the plants flower well when introduced into heat, notwithstanding the summary character of the potting process. After they have done flowering, they are planted out in the open ground for the summer, and in the autumn again potted and placed in warmth as stated above."—*Gardener's Monthly*.

APPLE MARMALADE.—Apple marmalade is a simple and excellent preserve, and offers a change from the ever present cider apple sauce and stewed apples, seen on so many country tables. Take seven pounds of late fall pippin and stew them in a pint of water. Put them through a sieve, add the juice and the grated rind of three lemons. Boil about one hour; ten minutes before it is done add three ounces of ginger root. This may be made of one-third quinces and two-thirds apples, when the ginger root and lemons should be left out.

SPARROW-GRASS.

DEAR BROTHER,

You've asked me in terms to relate
How to grow Sparrow-grass to have it first-rate;
You ask what I do, and how it is done,
To insure in the quality letter A one.
I'll disclose to you all you desire to know,
To be happy at dinner and win at the show.

Be firm in the thought and prompt in the deed,
Persist in destroying each insolent weed:
Let no such intruder e'er rob of its food
A plant that is worthy of everything good.
Yes, root out the weeds whenever you pass,
If you wish for a crop of the very best grass.

When autumn arrives, and the growth is done brown,
Take a terrible knife and cut it all down;
Then fork the beds lightly; don't injure the roots,
Or you ought to do penance with peas in your boots;
Make tidy and clean, remove all the litter,
Then take a short rest and a mugful of bitter.

Now, refreshed by the essence of hops and of malt,
Bring forth your supplies of soot and of salt;
Spread the black stuff to cover the bed like a pall,
Then sprinkle the salt to make white over all;
Some sterrens (politely so called) from the stable,
Lay two inches thick, or three, if you're able.

Leave all alone now to the mellowing light,
The rain and the frost, and the dew of the night;
But at times you must drench the bed freely with
sewage,

And for this you need only the household brewage.
Put it on as you get it direct from the house,
And, if needful, be secret and sly as a mouse.

When winter sets in leave the whole thing alone,
If you sewage in frost you will soon be undone;
In times when the rain kills the flowers and midges,
Put sewage on land that is laid up in ridges.
When the grass has done growing it needs a long rest,
So withholding the stimulants now is the best.

Once more the bright spring, with her elegant tresses,
Her laughter and tears, her green and gold dresses,
Will skim o'er the land to make us all merry,
And put on our faces the bloom of the cherry;
Then, then, my Sparrow-grass grower, look out:
There is work to be done, if your sinews are stout.

Your loins must be girded, your head in its place,
Your feet firmly shod, and your knife in its case;
Spread straw or rough litter all over the bed,
To screen off the wind, or your grass will rise dead:
By "dead" I mean dull, dry, shriveled, and shrunk,
Like a man who much tipsles, yet never gets drunk.

Once again pull the weeds, let the salt-box be found;
Give a dusting like snow to cover the ground;
Do all this before a green top shall appear,
And you'll have your grass right for the rest of the
year.

But beware of great haste in removing the sticks;
Let them grow to four inches or even to six.

Then pull—do not cut—and the crop will be fine;
You will say to your cook, "I desire to dine";
Rich and tender, full-flavoured 'twill be, if cooked
right—

Fill the stomach with food and the soul with delight!
Oh, the world must be good that in plenty produces
A grass so abounding in delicate juices!

Once in for this pastime, bravely go on.
Fill the basket each morn in advance of the sun;
But on June seventeen the tables must turn—
You must cease to take grass, though your fingers
may burn.

One more merry pull, 'tis the last you may have,
Unless for your grass you'd be digging a grave.

Be content, let it grow, make an end of your feast;
Be wise like a man, do not waste like a beast;
Thus, season by season, as weeks and days pass,
You must manage the work as you wish for good
grass.

If you think the name vulgar you may, without
malice,

Just call it *Asparagus officinalis*.

—*The Gardener's Magazine*.

BOOKS AND PERIODICALS.

HAND-BOOK OF PRACTICAL LANDSCAPE GARDENING. By T. R. Elliott. Second edition, enlarged and improved. Published by D. M. Dewey, Arcade Hall, Rochester, N. Y., U. S. A.

This is just what it claims to be, an eminently practical book, containing plans drawn to a scale, and the places where trees and shrubs are to be planted so numbered that any one can carry out the plan. We commend it to every one wishing to lay out his grounds, however small, and plant them in a manner that will be a source of pleasure to him ever after. School Trustees will also find useful hints for planting the grounds around the school-house—a matter sadly neglected, and that deserves attention. The book only costs a dollar and fifty cents.

VENNOR'S ALMANAC FOR 1882. Published by J. M. Stoddart & Co., Philadelphia, Penn., U. S. A.

Contains Mr. Vennor's prognostications of weather for the year, besides other matter interesting to weather students.

VICK'S FLORAL GUIDE, 1882.

Of the many Guides and Seed and Plant Catalogues sent out by our Seedsmen and Nurserymen, and that are doing so much to inform the people and beautify and enrich our country, none are so beautiful, none so instructive as *Vick's Floral Guide*. Its paper is the choicest, its illustrations handsome, and given by the thousand, while its colored plates are gems. This work, although costing but ten cents, is handsome enough for a gift book, or a place on the parlor table. Published by James Vick, Rochester, N. Y.

NOTE.—When this Number went to press we were under the impression that the Colored Plate of “EVERLASTING FLOWERS” which we ordered had been received. It turns out that it cannot be supplied, and therefore we present our readers with a very pretty plate of Summer Radishes instead. This change has caused some delay in the mailing of this number, and we hope that our Subscribers will accept of this apology. In future we expect to be able to mail the Magazine promptly on the first day of the month.

SUMMER RADISHES.

Through the courtesy of Mr. James Vick we present our readers with a colored plate of Summer Radishes. They are among our most handsome vegetables, and when nicely grown are not only an acceptable relish, but a very pretty ornament to the table. Our readers will notice that the different varieties are numbered. The two numbered 1 and 8 are known as the red turnip radish, No. 1 having a white tip, No. 8 red throughout. When well grown the flesh is white and crisp, and the radishes about an inch and a half in diameter.

No. 2 is the French Breakfast radish, olive-shaped, light scarlet with white tip, a very pretty radish, and at the same time one of the earliest and most tender. It is usually esteemed to be the best of the radishes.

No. 3 is the White turnip, and No. 4 the Yellow turnip radish, very much

the same as the red turnip variety, the difference being mainly in the color, which admits of a more pleasing variety for table ornament.

No. 5 is the Scarlet olive-shaped, a very fine sort, of excellent quality, and much esteemed. It does not differ materially from No. 2, except that it is not ornamented with the white tip.

No. 6 is known as the Long White Naples. It is a beautiful clear white, and an excellent sort, coming in after the olive-shaped varieties.

No. 7 is the favorite market radish, known as the Long Scarlet, a beautiful root, in use at the same time as the White Naples, with which it forms a pleasing contrast when nicely arranged in a glass.

Radishes should be grown in a light, warm soil, well sheltered from chilly winds, where they will grow fast, so that they may be crisp and tender.

THE Canadian Horticulturist.

VOL. V.]

FEBRUARY, 1882.

[No. 2.]

EVERLASTING FLOWERS.

The beautiful colored plate which is given to our readers in this number will shew them how abundant are our floral resources, and though we may not be able to have a green-house or conservatory from which we can gather flowers during the bleak winter days, yet we need not be without our bouquet for table or mantel decoration. These brightly-colored flowers can be grown in summer, and gathered at the proper time, laid away in a drawer, where they will retain all their freshness of coloring, until wanted to enliven the rooms whence the perishing beauties of flora have vanished.

Those of our readers who are familiar with these everlasting flowers will readily recognize each flower in this charming bouquet. That beautiful *Acroclinium Roseum*, with pink margined petals shading to white at the base, is a tender annual that should be started in a pot or box in the house to secure quick germination of the seed. It will grow to about eighteen inches in height, and yields a large number of its pretty daisy-like flowers. These should be gathered the first day they open, or even before they are fully

open, else the centre is apt to be discolored. There is also a pure white variety. The *Helichrysum* flowers are also conspicuous, the one brownish-red, and the other dark-red, with purplish shade. These are easily grown from seed in the open border and attain a height of about two feet. Their colors are white, yellow, and various shades of brownish-red. The flowers should be cut just before they are fully expanded. The *Xeranthemum* is also easily grown; it flowers abundantly in colors of purple, blue and white, growing hardly a foot in height. Just above that white *Helichrysum*, and a little to the left, will be seen that old-time friend, the *Globe Amaranth*. It is best to sow the seed of this in a pot in the house, or in a hot bed, as it does not germinate freely in the open ground. They are pure white, flesh-colored and purplish-crimson. These should be gathered in the autumn after the flowers are fully developed. Just above this are the yellow and purple *Statice*, which, though not everlastings, are easily dried, and retain their color when in that condition. At the top of the bouquet are the white and rose-

colored *Rhodanthe*, with their lovely bell-shaped flowers. It is necessary to cut these before they are fully open, so that they may not lose their pretty bell-like form. Sow the seed of these also in a hot bed, if you have one; if not, in a pot or box. Next to these is *Helipterum Sanfordi*, a gem of beauty, with rich, yellow, star-like flowers, which will retain their beauty for many years. It grows about a foot high, is easily cultivated, and bears an abundance of flowers. The clusters should be cut just as the flower-buds are opening, tied in bunches, and hung in the shade; the flowers will expand while drying and retain their bright color. Those little flowers at the right, which look so like little button daisies, are grown extensively in France, where they are dyed all colors, or bleached white, and shipped all over the world. At the left hand, near the base, is a spray of the Hartford Fern (*Lygodium Palmatum*), a most elegant plant, the leaves of which will retain their form and color for years, if kept from the dust. Intermingled with these are those beautiful grasses, at the left the little *Briza Minor*, above it the *Brizæform* *Bromus*, at the top the *Nebulous Agrostis*, and near the bottom, on the right, the well-known quaking grass, *Briza Maxima*. Just below the yellow *Helipterum* is that airy, graceful, little *Gypsophila*, and below it a frond of the native *Holly Fern*.

Thus have we endeavoured to set forth the various flowers and plants of which this pretty bouquet is formed, that our friends may know how to make

preparation in time and lay in a supply for another season. Then when the winter winds are howling and the garden is bleak and bare, you can bring forth your store of everlastings, grasses and ferns, and with a few evergreen sprays, deck your Christmas tables in spite of Jack Frost. To dry these nicely, the flowers should be tied in small bunches by the stems, and hung up with the heads down in the shade until dry, when they can be carefully stowed away in a drawer, or on the shelves of a dark closet, until wanted.

There is another grass that deserves to be mentioned here, which the writer has found most useful, and most beautiful too, for winter decoration. It is the striped *Eulalia*, which seems to be perfectly hardy, and whose graceful plumes, so like the Prince of Wales feather, lend such a charm to any attempt at winter decoration. It is a perennial, whose leaves, striped with white and bending in graceful curves, give so much beauty to the garden in summer, and its autumn plumes to the house in winter.

REPORT ON FRUITS.

The Grimes Golden Apples, also the Pomme Grise, have done very well with me. The Flemish Beauty Pear has done very well also. The Clapp's Favorite appears healthy, grows well, and blooms profusely, but has produced no fruit. Glass' Plum has done well, but I am, I fear, going to lose it with black-knot. Salem Grape did very well, but the Eumelan does not stand the winter's frosts.

R. GOWANLOCK.

Maple Hill, Jan. 2, 1882.

A FEW HINTS ON GRAPE GROWING.

(Concluded from page 10.)

The Green Grape Vine Sphinx also feeds on the leaves of the grape vine, as likewise does the beautiful Wood Nymph, shewn in Figure No. 8, and



Figure No. 8.

THE BEAUTIFUL WOOD NYMPH. (*Eudryas grata*).

though they have not as yet become very numerous, should be treated as possible enemies.

The Thrips, shewn in Figure No. 9, often becomes so numerous as to de-



Figure No. 9.

THE THRIPS. (*Tettigonia vitis*).

Here shewn highly magnified, the lines at the left indicating the natural size, in the one with the wings extended, in the other at rest.

stroy the leaves of the vine by preying upon their under-surface. This is particularly the case if too much wood is left on the vine when pruning, causing the foliage to become very dense and matted. This insect is more injurious to those vines whose leaves are thin and smooth, than to those whose leaves are thick and woolly. It is a very troublesome insect when it becomes abundant, and is not easily destroyed; but, fortunately, it does not follow that because they are abundant in one sea-

son, they will appear in like numbers the next.

WHERE GRAPES CAN BE SUCCESSFULLY GROWN.

In Europe it is thought that the lowest summer temperature in which the vine succeeds is 65 degrees Fahrenheit; that is, the mean temperature for the four months of June, July, August and September, must be equal to 65 degrees. Whether our native grapes are bound to the same limits of temperature, I cannot say; but we know that quite a number of varieties will grow and ripen their fruit at Ottawa, and at Peterboro', and Barrie. Hence it may be inferred that in any part of Canada not colder during the summer than those places just named, those sorts which ripen as early as the Delaware may be planted with every expectation of enjoying ripe fruit.

The Champion, Creveling, Eumelan, Merrimack, Moore's Early, Worden, Brighton, Massasoit, Martha and Lady, have been found to ripen as early, and some of them earlier than the Delaware, and hence may be expected to ripen their fruit wherever the Delaware will ripen.

Along the shores of Lake Huron and the Georgian Bay, the climate is so far modified by those large bodies of water, that many varieties ripening later than the Delaware succeed perfectly. There is a belt of land lying adjacent to those waters, the width of which has probably not yet been fully ascertained, where not only the varieties above mentioned will ripen, but also the Concord, and even the Iona and Isabella. At a certain distance from the water, the climate becomes less favorable, though the latitude is lower, and it will be found necessary to plant only those that ripen as early as the

Delaware. But the most favored localities for grape-growing are to be found on the southern shore of Lake Ontario and the northern shore of Lake Erie to and up the Detroit River, and on some of the islands lying in Lake Erie. There the ameliorating influence of the water is felt; spring frosts do not occur so late as at places farther in the interior, nor do the autumn frosts show themselves as early. The melting ice of the upper lakes continually flowing through Lake Erie, keeps the temperature of the water at a foot below the surface at about forty degrees of Fahrenheit during the month of May, so that the atmosphere is cooler than it is in the interior, and the buds do not burst as early as they do farther inland. By the latter part of July the temperature of the water rises to that of the atmosphere, in August the water becomes warmer than the air, in September the water is three degrees warmer, and in October six degrees warmer than the surrounding air. But the water is continually giving out its heat into the atmosphere, thereby keeping it at a higher temperature near the Lake than it is in the interior, and so preventing early autumn frosts. Elevation also has its influence upon the temperature. There is a line of altitude where the autumn frosts do not fall as early by many days—and sometimes weeks—as in the valley below. Many a farmer living in a rolling section of country, has noticed that Indian corn on the flats and in the bottoms has been severely injured by frost when that on rising ground and hill-sides has entirely escaped. This is owing to the fact that cold air is heavier than warm; it rolls down into the valleys and bottoms, while the warm air ascends the hill-sides and slopes. It is in such favored portions of the country that numerous varieties of grapes can be grown; there they not only ripen, as it is usually

understood, but there they can be allowed to hang upon the vine, and develop all their saccharine properties, becoming much sweeter than the same variety becomes when the season is of shorter duration. And fortunately this embraces a large portion of Western Ontario, all that part lying between the two Lakes—Erie and Ontario—and that portion lying between a line running through Hamilton, London, Chatham and Sarnia, southward to Lake Erie.

There is another influence to be considered, and one which has a natural effect upon the growing of grapes in the highest degree of perfection, and indeed of all other fruits. I refer to the quantity of summer rain. It is true the amount of rain-fall in each year cannot be depended upon with the same certainty as the annual return of heat, yet in a series of years the average rain through the summer can be determined with considerable accuracy. The region of these great lakes, from the Thousand Islands of the St. Lawrence to the western extremity of Lake Superior, is favored with a smaller rain-fall than other parts of the country. Taking this entire region together, the average summer rain-fall is about ten inches of rain.

Within this belt or zone, where the average summer rain does not exceed ten inches, the cultivation of the vine has been attended with the greatest success; and we confidently predict that with favoring soil and exposure the choicest vines will be grown within this same area. Surely the land-owner who is so fortunate as to be located within these favoring limits need not delay to plant his vines. With the same care and attention that commands success in any undertaking, he may be reasonably certain of reaping a rich return for all his labor and enterprise. Within this favored region, the vine itself is more

vigorous and healthy, and the fruit of superior quality; and the days will come when the grapes of this part of Ontario will be in as great repute as the apples and pears are now. And these are growing in estimation every year, for experience is teaching the world that the apples of this region will keep better, bear transportation better, and are of better flavor than those of any other part of America. A bearing apple orchard of five acres now yields a better return than all the rest of a hundred-acre farm; and with the increasing supply comes a yet larger demand. So will it be with the vineyards and their fruits. Grapes in France command to-day a higher price than they do in Canada. And when the vineyards of this region shall have become perfected, the excellence of the grapes and wines understood, and the production sufficiently considerable to command attention, the prices received will be in correspondence with the excellence of the products. There need be no fear that fruit raising in Ontario will ever, or can ever, be over-done. There is a bushel of strawberries raised now for every quart that was grown ten or twelve years ago, and the price of a quart of strawberries is certainly not any less now than it was then. There are probably a hundred barrels of apples sent to market now for every barrel sold twenty years ago; yet the price has not diminished, but of the two has increased with the increased production. How many bushels of tomatoes were raised and sold a few years ago, and what was the price paid then? If the lamp of experience sheds any light upon the path of the fruit grower, that light reveals a consumption and demand more than keeping pace with the production.

CULTURE IN GARDENS.

There are some inconveniences attending the cultivation of the grape in town

and village gardens, owing to the great amount of shade from adjacent buildings, and the want of free circulation of air. But these are in a great degree counterbalanced by the increased protection and heat from reflection, so that the fruit usually ripens earlier than in the open vineyard.

It is a very common mistake to plant the vine directly against the bottom of a wall or high fence, and to train it close to the wall. The proper method is to plant two or three feet from the wall, and train the vine up at that distance from it, thus giving space for the circulation of air between the vine and the wall or fence. The training and pruning should be conducted with reference to giving as much air and light as can be done. The wood should be well thinned out in spring, and the foliage exposed as fully as possible to the sun, while the fruit is kept wholly in the shade.

MANURING THE VINE.

Manures should be supplied with care, avoiding the use of coarse and unfermented materials, which usually tend to produce a rank growth of wood, and give a watery character to the fruit. Old and thoroughly-rotted barn-yard manure, ashes, ground bones, and a little salt, may be used as required. The practice of drenching the vines with soap-suds is very often injurious, always injurious unless the soil be very porous or otherwise most thoroughly drained. Those grapes which are forced into an unnatural size by excessive manuring and drenching are often very showy and pleasing to the eye, but very watery and flavorless to the palate.

GATHERING AND PUTTING UP FOR MARKET.

It is surprising that there should be so much carelessness manifested in the simple matter of getting fruit to market after it has been grown and ripened. There is no part of the business that

needs to be attended to with more care and nicety than the condition in which the fruit reaches the consumer, and no part of the business yields as great a return as the attention bestowed upon this apparently little matter. Were our farmers to assort their apples into first and second quality, putting up as first quality only those apples which were of full size for the particular variety, and that were free from every blemish, and putting up as second quality those that could be fairly classed as such, rejecting altogether or selling for cider-making all else, they would frequently receive more for the first-class apples alone than they now obtain for the entire crop, besides establishing a reputation for their brand that would enable them always to command a ready sale; and what is true of apples is true of every description of fruit.

If grapes are torn roughly from the vines, tossed into two bushel baskets and hurried in a lumber waggon to the nearest market, no wonder that the bruized, dripping berries are passed by, and if sold at last, sold for almost nothing. Were the same grapes brought to market in a clean and attractive condition, they would sell without trouble at the full market price.

In order to have the grapes reach market in the best possible condition, and particularly when they must be transported to some considerable distance, they should be gathered only when they are dry, the clusters cut carefully from the vine, and laid into shallow baskets without handling more than is absolutely necessary, so as to preserve as much of the bloom upon the berries as possible. They should not be piled up, but kept spread out thinly, so that the weight of the fruit shall not break the berries beneath. After gathering they should be taken to some cool, well-aired room for two or three days, and some of the super-

fluous moisture allowed to evaporate. This will toughen the skins so that they will not burst so easily upon being slightly pressed. The clusters should be lifted up carefully by the stem, and all unripe or defective, bruized or broken berries cut off with sharp-pointed scissors. They may now be laid into the boxes in which they are to be transported to market. These boxes should not be large nor deep, but shallow, and made to hold only a few pounds. The best boxes for this purpose are made of a thin veneer of elm or whitewood or basswood. They are made of various forms and sizes, some are round and some are square. I prefer the square form, for the reason that they can be packed more compactly into a case, and a given weight of fruit will occupy less space. The grapes should be packed in these boxes as compactly as possible without breaking any of the berries, and so that when the lid is closed upon them they will be lightly pressed. This will prevent the fruit from shaking about in the boxes. Cases should be made so that these boxes when filled will fit snugly into them, and made as light as is compatible with the needed strength, and of a size that a man can handle one of them without effort when filled with the boxes of fruit. When these cases are filled and closed, there should be no space for the boxes of fruit to rattle about, but each box should be held firmly in its place. In this condition the grapes can be sent to any market within reach of rail or water communication, and will arrive in good condition and sell for the best price.

It is usual in filling these boxes to fasten the top on the box and open the bottom, and then pack the finest-looking and most showy clusters first, using smaller clusters if need be in filling up, but not putting in any berries of inferior quality. When the box is full

the bottom is fastened securely, and when the dealer opens the box to exhibit the fruit to his customers it presents a fine, attractive appearance.

When these boxes are properly made they are very light, and are sold by weight with the fruit. In this way the purchaser has a convenient package in which to carry home his fruit, and when properly regulated will have paid the cost of the box. Frequently these boxes will be found convenient, and to secure the sale of the fruit at a better price, even when it is not necessary to transport them by railway, and the grower carries them in his own wagon to the nearest market.

It makes considerable difference to the grower whether he gets four or six cents per pound for his grapes. Up to the day of gathering the fruit he will have expended a given sum upon his vineyard, and now if he harvests and markets his crop in such a way that it sells for only four cents per pound, when he might have got six cents, he is a great loser. If he have an acre of grapes, yielding him say only three tons, or six thousand pounds, the difference between four and six cents per pound is one hundred and twenty dollars, which will pay for considerable extra labor, a great deal more than the cost of the difference between careful and slovenly harvesting.

PROFITS OF GRAPE CULTURE.

The question is often asked by those who are thinking of planting for market, will it pay? To this inquiry it may be truthfully replied that the raising of fruit for market is like every other business, the question of profit depends mainly upon the energy, attention and skill of the grower. An acre of grape vines in full bearing will yield five tons of grapes, or ten thousand pounds. If, then, the grower realizes only four cents

per pound, he will have received four hundred dollars from his acre. But if a judicious selection of varieties is made, so that there shall be a continual supply of fruit from the time that the earliest ripens to the end of the season, the price will be more likely to average at least six cents per pound, in which case the acre's crop will be six hundred dollars. A grower near Hamilton, who takes good care of his vines, realizes ten cents per pound for his entire crop. And why may not you?

CHOICE OF VARIETIES.

The following list embraces most of the varieties now in cultivation which can be successfully grown in any part of Ontario. I frankly state my own opinion of their qualities, in the hope that my experience and observation may be of service to those who desire to plant:

ADIRONDAC.—Ripens early, usually a few days before the Hartford Prolific. In size of bunch and berry, it much resembles the Isabella. The color is black. The flesh is soft and breaking, sweet and agreeable flavor, bearing more resemblance to a Black Hamburg than any other hardy grape that I have yet seen. And yet such is its lack of vigor and endurance, that I cannot advise any one to plant it who is not willing to give it great care and attention.

AGAWAM.—Also known as Rogers' Number 15. The best flavored of all his red varieties, bunches variable in size, berries large, dark red, tender and juicy, with a pleasant, somewhat musky flavor. Ripe a little after the Concord. In unfavorable seasons the vine is apt to mildew, otherwise it is hardy, vigorous and productive.

ALLEN'S HYBRID.—This grape is one of the best in quality, but the vine is not hardy, and very subject to mildew.

ALVEY.—The berry is quite small, the vine only moderately productive, and the variety not desirable.

ANNA.—I only name this variety for the purpose of cautioning Canadians from purchasing it; for it is worthless in our latitude.

BLOOD'S BLACK.—This is wholly unworthy of cultivation, and he who purchases it wastes his money.

BARRY.—Rogers' Number 43. An excellent black grape, large, sweet, and nearly free from pulp. Ripe at the same time as the Concord. Vine hardy, vigorous and productive.

BRIGHTON.—A valuable variety; hardy, vigorous, ripens its wood early, very productive, berries large, dark crimson when fully ripe, sweet, aromatic. Ripe as early as the Delaware. Worthy of a place in every garden.

CATAWBA.—Will not ripen thoroughly in most of Canada, requiring a longer season than we possess. He who plants largely of this sort here will surely regret having done so, unless he plant on the Islands of Lake Erie.

CHAMPION.—A very vigorous, exceedingly hardy and productive grape, capable of enduring great severity of climate, and succeeding everywhere. It is a pioneer variety for the coldest parts of the country, ripening early, and yielding fruit under most adverse circumstances. It has been very profitable on account of its earliness and great productiveness; yet it is not of fine quality, and will eventually give way to better grapes ripening as early. The berries are large, black and attractive, borne in medium-sized clusters. If you have not been able to grow grapes in your locality, this will surely succeed and ripen a fine crop of fruit.

CLINTON.—This variety is planted chiefly for wine. The bunches and berries are small; when thoroughly

ripe a very pleasant, refreshing grape. The fruit can be easily kept in any cool place free from frost, and improves in flavor. The vine is perfectly hardy and very productive.

CONCORD.—A most profitable market grape; large bunch and berry, black, covered with a beautiful bloom. In Missouri and Southern Ohio, it is planted extensively for wine. It is one of the most hardy and most prolific sorts we have, giving a generous return of fruit to the cultivator. It has been largely planted for market, and, notwithstanding that the price rules low, such is the yield and certainty of crop that it is one of the most profitable.

CREVELING.—An early ripening variety of excellent quality; bunch and berry about the size of the Isabella. The berries frequently set very poorly, making the bunches straggling. Were it not for this defect it would be highly valued for its fine flavor and early ripening.

CUYAHOGA.—Ripens too late to be valuable.

DELAWARE.—I do not hesitate to say that this is one of the best hardy grapes that I have yet fruited. It is hardy—very hardy—enduring our winters well. It is very productive. The flavor is sweet, delicious, refreshing. The vine, when once established, is thrifty, making a growth nearly equal to the Clinton. It will bear higher cultivation than most other sorts, and well repays the generous treatment. Yet I have seen it in a sod, wholly neglected, bearing an immense crop of beautiful fruit. Some complain that it does not succeed with them; but the fault is probably in the treatment or soil, not in the variety. This grape, while excellent for the table, is equally valuable for wine, and is largely planted for that purpose.

DIANA.—This variety will yield the most satisfactory results in a very dry,

warm and rather poor soil. In a rich soil it runs to wood, and in a damp or cold soil will not ripen its fruit. It ripens very late. When ripe, the fruit is very sweet, and has a flavor peculiar to itself; and when wine is made exclusively from the juice of this grape, the peculiar Diana flavor is distinctly perceptible in the wine.

DUCHESS.—The quality of this grape is excellent, but as it ripens a little after the Concord, it will not be suitable for the colder parts of Ontario. Besides this, the vine seems to be easily affected by adverse influences and lacking in constitutional vigor. However, it is a new sort, not yet thoroughly tested, and time will be needed fully to ascertain its value for us. It is pale greenish yellow when ripe.

EARLY VICTOR.—A very hardy, healthy variety, which gives promise of being very valuable for us, on account of its vigorous constitution, great productiveness and early ripening. The bunches are above medium size, compact; berries medium, round, black, with a heavy blue bloom; juicy, sweet, free from foxiness; ripe fully a week before the Hartford Prolific.

EARLY DAWN.—The quality of this grape is very good, but I have found the vine very subject to mildew, and lacking in vigor of constitution. The bunches and berries are of medium size; berries black, with a thick bloom, juicy, rich, sweet and good; ripe fully a week before the Hartford Prolific. Were the vine only healthy, and not subject to mildew, it would be a desirable variety.

ELDORADO.—Thus far this vine has been healthy and vigorous. The clusters are large, berries full medium size, white, juicy and high-flavored. Ripens as early as the Hartford Prolific.

EUMELAN.—This vine has not proved to be as desirable in our climate as was

hoped. It has not seemed to possess sufficient hardiness of constitution to adapt itself to many localities, and the fruit is lacking in richness and flavor.

HARTFORD PROLIFIC.—This was at one time the earliest grape we had. It is of poor quality at best, the berries drop from the bunch when ripe, and, although it sold well on account of its earliness, we have now so many that ripen as early, and some even earlier, that it will soon be superseded.

HERBERT. Rogers' No. 44.—A large black berry, grown in large, long bunches; sweet, rich and fine-flavored; one of the best in quality of the Rogers' Hybrids. It ripens early, and the vine is hardy and productive.

HIGHLAND.—A new hybrid variety not yet tested in our climate. Berries large, black, and of fine quality.

ISRAELLA.—Has gone out of sight since the introduction of earlier ripening sorts. It is not a fruit of high quality. Ripe just after the Hartford Prolific.

IONA.—Did this grape ripen well in our climate it would deserve a foremost position in every garden. I esteem it one of superior quality; juicy, sweet and high-flavored; but it is too late for general cultivation in this Province. Only in the warmest sections can it be relied upon to ripen. The bunch is large, long and loose; berries red, medium size.

IVES SEEDLING.—Not worth growing in this climate. It is used in some sections for wine, but the berries have such a hard pulp and foxy flavor that they are not fit for table use.

JANESVILLE.—Another variety of poor quality, but which ripens early, and enjoys a very robust constitution. The vine is very hardy, healthy and productive; the berries black and medium in size. It can be planted with Champion in the colder sections.

JEFFERSON.—A new variety raised by crossing the Concord and Iona. Thus far it has proved to be very healthy and vigorous, with large, thick downy leaves. It is a large, handsome and showy fruit, light red, covered with a thin lilac bloom, juicy, sweet and rich, with a sprightly aromatic flavor; much resembling the Iona, and the nearest approach to its delightful flavor of any yet introduced. It ripens with the Concord, and should be tried by every one who finds the Concord to ripen. It promises to be a most valuable market sort on account of its showy appearance, superb flavor, and maintaining its sprightliness for a long time after being gathered. (*See Cut.*)

LADY.—The earliest ripening white grape. The bunches are only of medium size, berries about as large as the Concord, of a light greenish-yellow when ripe, very sweet and pleasant. The vine is quite hardy, vigorous and healthy. It is well deserving of trial in our climate.

LADY WASHINGTON.—Certainly the most magnificent looking hardy grape I have yet seen, and as fine in flavor as it is beautiful in appearance. The vine appears to be perfectly healthy, the leaves are large, thick and downy, promising to endure well the extreme changes of our climate. The bunches are very large, berries medium, pale yellow, with a delicate pink tinge on the exposed side; juicy, sweet, slightly vinous, and fine quality. It ripens just after the Concord. If this grape on further trial should succeed well in our climate, it will be a most noble acquisition, and a most profitable market sort. I trust everybody will give it a trial who lives where the Concord will ripen. (*See Cut on Page 36.*)

LINDLEY. Rogers' Number 9.—A strong growing, healthy vine, and remarkably productive. Both bunch and

berry are of medium size; color red when ripe; sweet, juicy, and somewhat aromatic. An excellent variety, ripening just before the Concord.

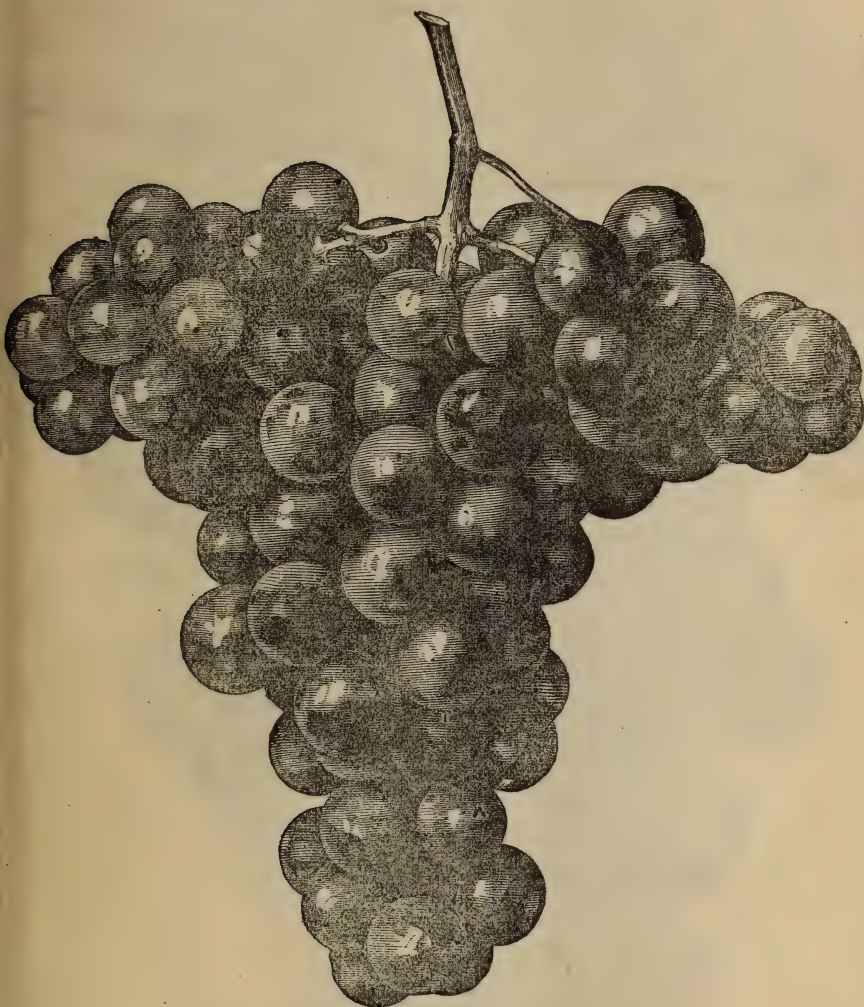
MARTHA.—A very hardy, healthy and productive vine; the bunches and berries are about like those of the Concord; the color is a light greenish yellow; flavor sweet, with considerable of the muskiness of the Concord; but ripening a little earlier.

MASSASOIT.—The earliest ripening of all the Rogers Hybrids, and known as his Number 3. The bunches and berries are of medium size, red, good flavor, and ripe as early as the Hartford Prolific. The vine is hardy and vigorous.

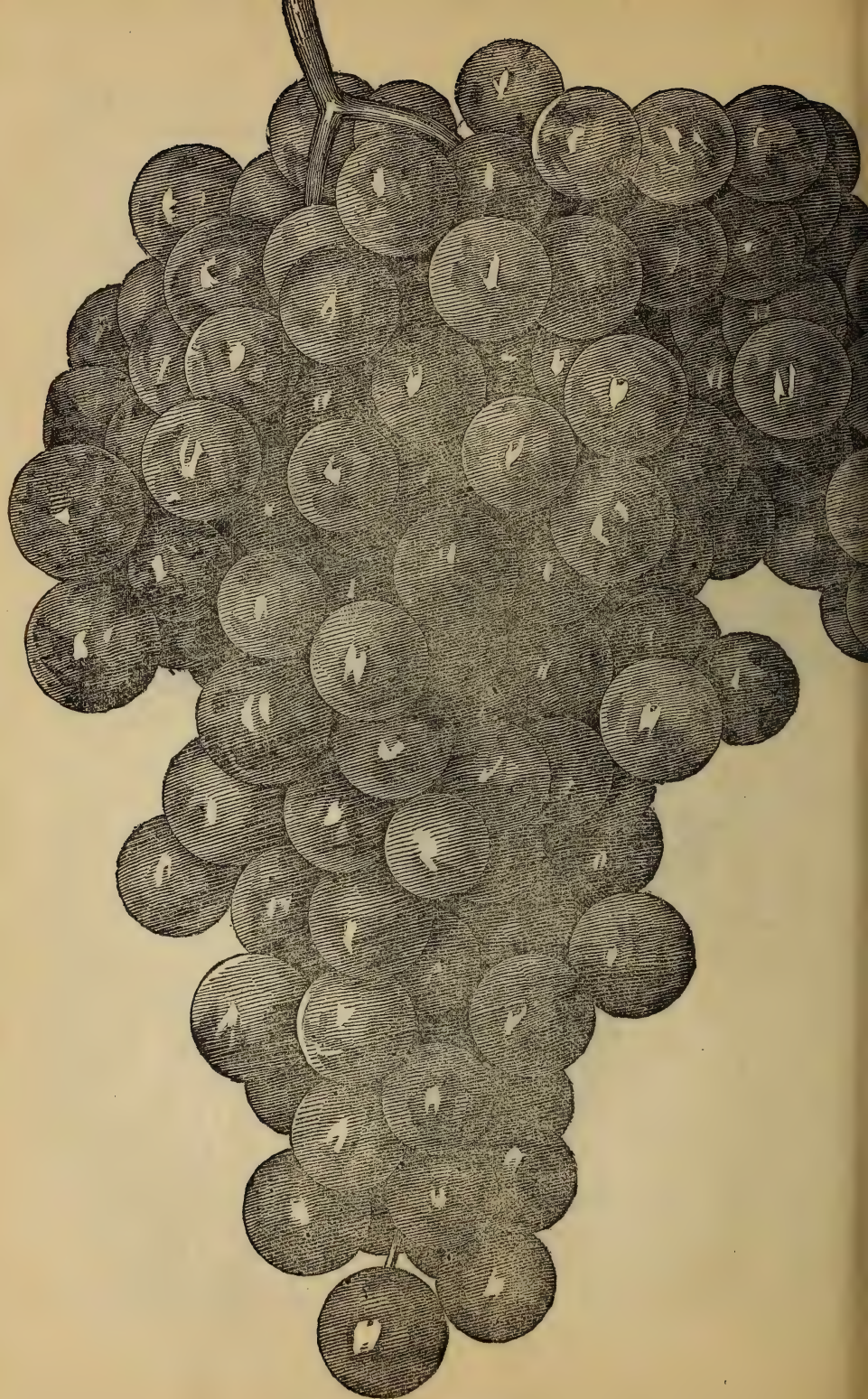
MERRIMACK. Rogers' Number 19.—This also ripens earlier than the Concord, the fruit is black, large, rich and sweet, and the vine is productive and vigorous. Very like the Wilder in quality and flavor, and ripening about the same time.

MOORE'S EARLY.—A most valuable grape for our climate on account of the early ripening of both wood and fruit. It will grow as far north as any, and ripen its fruit perfectly. It is a black grape; in bunch and berry about the same size as the Concord, and fully equal, if not better, in flavor. It is ripe some time before the Hartford Prolific; and will doubtless prove to be a most profitable very early market grape. It should find a place in every garden. (*See Cut on Page 37.*)

POCKLINGTON.—A very large, showy, white grape; sweet, rich, with the musky flavor of the Labrusca family. The vine is healthy, vigorous, hardy and productive. It would seem to ripen fully just after the Concord. It will doubtless prove to be a profitable market grape on account of its large size of bunch and berry and showy appearance. (*See Cut on Page 38.*)



JEFFERSON. Reduced One-third.



LADY WASHINGTON



MOORE'S EARLY.



THE POCKLINGTON.



A BRANCH OF THE PRENTISS GRAPE,

From a Photograph, shewing its great productiveness.

PRENTISS.—Another new white grape of excellent quality, and promising to be valuable where the Concord will succeed. The vine so far has proved to be hardy and very productive. The bunches are of good size, very compact, berries medium size, yellowish-green when ripe, sweet, juicy and of pleasant flavor. It will bear transportation unusually well, and keep in fine condition for a long time. It ripens about with the Concord. (*See Cut on Page 39.*)

REBECCA.—A delicious little grape, but very difficult of cultivation, not enduring well the extreme changes of our climate. Only those who are willing to give it most careful cultivation should ever plant it in this climate. It is a light-green when ripe, sweet and excellent.

SALEM. Rogers' No. 22.—A very popular grape, on account of the large size of bunch and berry, good quality of the fruit, and the healthy, hardy and vigorous character of the vine. It is nearly a maroon color when fully ripe; sweet, juicy and somewhat aromatic; ripe a little before the Concord.

SENASQUA.—A showy black grape of good quality, but ripening too late for general cultivation.

VERGENNES.—A very handsome red grape not much earlier than the Concord, but ripening its wood very early, and therefore likely to be very hardy. The leaves are thick and leathery; the vine exceedingly productive, vigorous and healthy. The fruit will keep a long time, retaining its fresh, sprightly flavor. It is well worthy of a trial in our climate.

WALTER.—A red grape, ripening at the same time as the Concord, of good quality, but it has not been planted sufficiently in Ontario to test its value in our climate, and it has not gained any great popularity elsewhere.

WILDER. Rogers' No. 4.—Probably this variety is the most popular of all the Rogers Hybrids. It has been very widely distributed, and everywhere is highly prized. It is large both in bunch and berry; black, sweet and very pleasant flavor. It ripens a very little earlier than the Concord, is a better grape and more showy. It is now beginning to receive the attention which it deserves as a market grape, and is being extensively planted for that purpose. The vine is vigorous, hardy, and productive.

WORDEN.—A black grape resembling the Concord, but ripening some ten days earlier. The bunches are large, compact and handsome; the berries are also large and showy. The vine is apparently as healthy, hardy, vigorous and productive as the Concord. In quality it is generally regarded as better than the Concord. It is valuable on account of its earliness and hardy character.

Instead of having only two or three varieties of grapes to plant, we are now becoming truly embarrassed by the number we have from which to make our selection. Each year adds some new varieties for trial, and so the number will go on increasing from year to year. Let us hope that increasing numbers will bring increased improvements, until we shall have at last found the grape that combines all excellences, and satisfies all expectations. Then may grape-growers bring forth the silver trumpet, proclaim the year of jubilee, and, sitting beneath the perfect vine, enjoy that rest for which the heart is ever sighing.

CUMBERLAND TRIUMPH (H).—A very fine berry in all respects; of very large size, fine form, beautiful color and excellent quality, and is growing into general favor. At the Nurserymen's Convention, held at Cleveland in June last, it was pronounced by good judges the finest appearing variety on the table.
A. M. PURDY.

WINTER BLOOMING PLANTS.

All the Geraniums are excellent window plants, but some of them are shy winter bloomers, yet many of them are handsome enough in their foliage, even if they are destitute of flowers. The most constant bloomers of any I have grown are Jean Sisley, a large, dazzling scarlet, with a distinct white eye; Master Christine, a single pink, and Loarine, a light scarlet, but the trusses are very large and full. These three are almost constant bloomers. Give Geraniums plenty of sunshine and fresh air, a moderate amount of water, to which there should be occasionally added some liquid manure, and abundant room to grow in, and they generally behave very satisfactory.

A few of the Fuchsias, or Lady's Eardrop, as they are sometimes called, are good winter bloomers. They are, however, strong feeders, and will starve to death on a soil in which a Geranium would grow luxuriantly, and more manure should be used with the soil in which they are potted. The following varieties have bloomed well for me all winter through: Arabella, tube and sepals pure white, corolla red; Speciosa, pale red sepals, corolla pale rose; and Lustre, waxy white tube and sepals, corolla tinted crimson and orange. I have never yet had a double variety that bloomed well in winter.

We have a magnificent class of plants in the Begonia. I will divide them into two classes, namely: the flowering and leaf varieties. Although the former all have handsome foliage, they are mostly prized for their beautiful flowers, which are produced in great profusion. They do best in a loose soil composed mostly of leaf mould and sand, and require a warm and partially shaded situation. Sandersonii and Hybrida Multiflora are the best winter bloomers. The former bears scarlet, and the latter

rosy pink flowers. The leaf varieties are only grown for the beauty of the foliage, and the most prominent is the variety known as Begonia Rex.



BEGONIA REX.

The leaves of this grow very large. I have one plant of Rex and one of Queen of Hanover, which have been growing in a log hanging basket for over three years, and some of the leaves have measured over 14 inches across.

The largest leaves of some others do not measure more than six inches in diameter, all of which are variegated and margined with silvery and metallic colors of different hues. They should never be planted out in our hot summer sun as bedding plants, but for window plants, or for wardian cases or ferneries, they cannot be excelled. Some think that Begonias are hard to grow, but it is an erroneous idea, as after you once understand their nature, their culture is very easy, and they all make capital window plants.

The Calla, or Lily of the Nile, is a fine house plant, and all it requires is



CALLA LILY.

an abundance of warm water, and plenty of sunshine, and if given the required

rest in summer, will not fail to produce its large white flowers all winter through.—PRIMROSE, in *Western Horticulturist*.

HOW TO PLANT TREES.

BY N. ROBERTSON, GOVERNMENT GROUNDS, OTTAWA.

A great deal has been written and said about tree planting. Some advise one way, some another. I will give you my method, with which I have been very successful, and, as it differs somewhat from the usual mode, may be interesting to some of your readers. I go into the woods, select a place where it is thick with strong, young, healthy, rapid-growing trees. I commence by making a trench across so as I will get as many as I want. I may have to destroy some until I get a right start. I then undermine, taking out the trees as I advance; this gives me a chance not to destroy the roots. I care nothing about the top, because I cut them into what is called poles eight or ten feet long. Sometimes I draw them out by hitching a team when I can get them so far excavated that I can turn them down enough to hitch above where I intend to cut them off; by this method I often get almost the entire root. I have three particular points in this: good root, a stem without any blemish, and a rapid growing tree. This is seldom to be got where most people recommend trees to be taken from—isolated ones on the outside of the woods; they are generally scraggy and stunted, and to get their roots you would have to follow a long way to get at the fibres on their points, without which they will have a hard struggle to live. Another point recommended is to plant so that the tree will stand in the direction it was before being moved; that I never think about, but always study to have the longest and most roots on the side

where the wind will be strongest, which is generally the west, on an open exposure.

For years I was much against this system of cutting trees into poles, and fought hard against one of the most successful tree planters in Canada about this pole business. I have trees planted under the system described that have many strong shoots six and eight feet long—Hard Maple, Elm, &c.—under the most unfavorable circumstances. In planting, be particular to have the hole into which you plant much larger than your roots; and be sure you draw out all your roots to their length before you put on your soil; clean away all the black, leafy soil about them, for if that is left, and gets once dry, you will not easily wet it again. Break down the edges of your holes as you progress, not to leave them as if they were confined in a flower pot; and when finished, put around them a good heavy mulch, I do not care what of—sawdust, manure, or straw. This last you can keep by throwing a few spadefuls of soil over; let it pass out over the edges of your holes at least one foot.

I have no doubt that the best time to plant is the fall, as, if left till spring, the trees are too far advanced before the frost is out of the ground; and by fall planting the soil gets settled about the roots, and they go on with the season.

Trees cut like poles have another great advantage. For the first season they require no stakes to guard against the wind shaking them, which is a necessity with a top; for depend upon it, if your tree is allowed to sway with the wind, your roots will take very little hold that season, and may die, often the second year, from this very cause.

All who try this system will find out that they will get a much prettier headed tree, and much sooner see a

tree of beauty than by any other, as, when your roots have plenty of fibrous roots, and are in vigorous health, three years will give you nice trees.

THE CUTHBERT RASPBERRY — ITS MERITS AND DEMERITS.

BY T. C. ROBINSON, OWEN SOUND.

No fruit seems to have been so well received, and so nearly to have monopolized the attention given by fruit growers to its class of late years, as the Cuthbert with our American neighbors; and now that it is putting in an appearance on this side of the line, a few words of critical description may be in order.

It is not a fruit of unqualified excellence any more than any of our choicest apples or plums or pears, though the almost unqualified praise it has met with would perhaps lead us to think so. The truth is, we needed a good raspberry that would grow anywhere, and both eat and sell well, more than any other kind of fruit except perhaps the gooseberry, that so many points of excellence combined in this raspberry fully account for its popularity without assuming for it perfection, as many seem inclined. We have had, it is true, raspberries of fine size and delicious flavor, like Clarke and Knevet's Giant, but to a lack of hardiness has been joined a softness which unfitted them for market uses. The grand old Franconia, so good for both market and home use, would not grow large enough to bear a paying crop on light soils, and would grow so large and soft on heavy soils as to winter-kill in most parts of the country. Philadelphia, the acme of productiveness, and sufficiently hardy, was too soft and dark-colored and poor-flavored to stand the test; and so on down the list, pausing at that model raspberry hardiness, the Turner, to note that

its sweetness, hardiness and vigorous growth, and adaptability to light soils, do not quite make up for a slight lack of firmness, size, and uniformity of ripening, necessary to a first-class market variety, while its earliness leaves a great want still for a good late variety. Just here the Cuthbert steps in, and hence its welcome. Its size is all that can reasonably be asked—not monstrous, you know, as some representations make it appear, unless extra cultivation is given, when it no doubt can be grown over an inch in longest diameter; but with fair market culture, it will run $\frac{5}{8}$ to $\frac{3}{4}$ of an inch by the quart. In shape it is much longer than the raspberries we have been used to—a cone, more pointedly conical than even Turner, which is quite long for a raspberry. It seems about as firm as Franconia, that is, as firm as a market raspberry needs to be; and its color is rich enough and bright enough, as grown with me, to satisfy the most exacting. How it will grow on poor, light land I cannot say, as I only have it on good land, or on poor, light land, so close to a richer, heavier strip that the roots have made themselves at home in the good soil on one side of the plant; and right here let me say that this question of its behavior on poor soils is one to which I do not propose to extend my experience. I have had enough of fruit growing on land not fit to grow even white beans, and think too highly of the Cuthbert to subject it to such a test. I have Franconias of three years' growth on such land that after the discouragement of last June's frost (clipping foliage, not blossoms), refused in such a dry season to give one quart to every twenty or thirty plants, even with the stimulus of a good mulch of manure. No doubt many fruit growers have just such land, and for their encouragement may serve the experience of American fruit growers who claim

to have succeeded with Cuthbert on light soil, but that is a point on which I stand aside. But as to productiveness I have no doubt personally. I do not like to say it is as productive as Philadelphia, simply because I should like a little more experience with it before praising it so highly. With it on my place three seasons—in only one of which it had growth enough to bear a full crop—I am not going to write as if I knew all about it; but, taking into account the mutilation of the roots to remove the suckers for planting, I have no hesitation in placing it second only to Philadelphia in bearing qualities, out of a dozen *red* raspberries tested so far.

But what are its faults? A distinguished American horticulturist and nurseryman says that is just what he has been trying for years to find out—and can't. Such excellence as this in the Cuthbert is more than I can see, but its demerits are certainly neither great nor numerous. Such as they are on my grounds, however, I state them, as we need to look on both sides of a question of fruit as of anything else.

And first, the canes do not seem quite stiff enough for the load of fruit. The stems shoot up with great rapidity in spring; in late summer they grow slower and mature innumerable fruit buds, and the stalk, of course, thickens up, but does not appear to acquire that toughness and rigidity of fibre we note in the Philadelphia and Turner. With the long laterals which summer pinching causes, of course the effect is to let some of the fruit get splashed in the event of a heavy rain, and if deep snows come in winter these laterals are apt to be broken off. Older experience may show a stiffening up of the cane, and different application of pinching favor a growth of laterals too high to be broken down by snows, but I simply state what I have seen so far.

Then I have not been able to quite gauge its hardiness. The first winter the yearling plants, together with foreign sorts, were badly killed—perhaps, indeed probably, because of too vigorous late growth—but frozen they were, and the fact must be faced. Last winter they came through smiling in spite of that cold dip that almost brought the thermometer down from the peg and the oldest inhabitant to his memory's end. But Clarke and Franconia came through too, nearly as well. And this winter, January 13th, they are green to the tips, except where very late fall growth was made—but the foreign sorts are not far behind.

On the whole, I do not think in this climate it is any hardier than Franconia, Clarke, &c., on one year old plants, but rather more so when full grown; but I do not regard the moist favorable climate of Owen Sound fit to decide the question, and I look eagerly for reports of my brother fruit growers in other districts to fix its value as to hardiness for the Province, conscious too that Cuthbert did not get a fair relative trial with me, because I had it on rich soil that caused quick soft growth, while the other sorts were on poor soil that caused closer grained harder wood.

Lastly, it has a large hollow—perhaps not wider than other sorts; but that long crimson cone fits on to a long stem, and fits pretty tightly too, though not so as to break in the picking, and when it comes off and lies with its neighbors in a quart basket, I should expect, after jolting in the express car, or standing thirty hours in a shop window, a sinking down in the basket that would cause a distinct murmur at the purchaser's end of the line.

That's the Cuthbert. There's room for a better berry—a little better—and, as usual, a number of claimants for public favor are ready to step in;

among which Lost Rubies stands first perhaps. But these are untried, and may turn out good or the reverse. If any man *knows* any raspberry that is better than Cuthbert, let him speak up! It must be good indeed! I don't; and if any man wants raspberries without too much trouble and plants the Cuthbert, I shall expect him to get lots of large handsome berries that are very good to take—internally or to market—and to feel about as satisfied as he can well expect to be in the fruit business.

EVERGREENS FOR HEDGE, &c.

Clinton, Jan. 20th, 1882.

DEAR SIR,—1. What kind of evergreens is suitable for a low hedge in a garden or cemetery that will stand trimming and not break down with the snow?

2. What kind of evergreens are suitable for a lawn as trees for ornament?

3. What time of the year should they be pruned to make them grow close?

4. Is there any particular way of trimming them?

5. Is any book published with diagrams showing the proper way?

6. Will it hurt trees twenty years old to cut them back to make them grow close? A SUBSCRIBER.

ANSWER.

1. The best are the dwarf Arbor Vitæ, which are of easy culture, can be trimmed in any form, and seldom get broken by the snow.

2. The Hemlock Spruce, White Spruce, Norway Spruce, Austrian Pine, Scotch Pine and White Pine, are all fine lawn trees, especially in grounds of considerable size. The American Arbor Vitæ, Siberian Arbor Vitæ, Swedish Juniper, Prostrate Juniper,

Savin Juniper and American Yew, are suitable for smaller grounds.

3. The best time to prune them is the last of May or first of June, when the trees are beginning to make a new growth.

4. The best method of pruning the Pine and Spruces is to rub off the terminal buds of the branches it is desired to make more dense just as they begin to push. If this is done when the trees are small, and kept up as occasion may require, it will never be necessary to use the knife, and the trees can be kept compact and symmetrical with ease. The Arbor Vitæ and Junipers can be trimmed with the shears and brought into any desired form. In all cases it is desirable to commence the pruning when the trees are small, so that but little cutting away will be needed.

5. We have never seen any such work.

7. No, if the pruning be not too severe. It will require more time to bring such a tree into a dense form than one that is young, but by patient shortening in every season, cutting off the ends of the branches, and waiting for the tree to grow more dense from year to year, the object will at length be accomplished without cutting off large branches, which would make the tree unsightly for some time.

THE CUMBERLAND STRAWBERRY.—Chas. Hurd, of Michigan, says: The Cumberland Triumph is the largest and most *delicately* flavored berry on my grounds. It is a berry to delight the amateur, is a rank grower and an abundant bearer. A few days since I received a letter from Mr. Miller, the originator, in which he says that from $1\frac{3}{4}$ acres this season he obtained 270 bushels. I consider it among the finest cultivated.—*Fruit Recorder*.

FIVE RASPBERRIES COMPARED.

I have been myself daily picking among the following named red raspberries during the last week, comparing points, which count in estimating the value of varieties, and hand you herewith, in a tabulated form, the results. My land is a sandy loam, and that occupied by the raspberries is about uniform in quality, about right to produce forty bushels of dent corn per acre.

In this scale of points I give ten, not as perfection, but as the highest yet reached by any variety—as for instance, Thwack is the hardiest, Reliance most productive, while Turner is generally conceded a standard in respect to flavor of the berry:

NAME OF BERRY.	Hardness.	Productiveness.	Firmness of Fruit.	Size of Fruit.	Attractiveness. In boxes (color).	Quality.	Total.
Thwack	10	8	10	8	10	8	54
Reliance	9	10	9	10	8	8	54
Turner	8	8	8	8	9	10	51
Cuthbert, or "Queen of Market"	8	9	7	9	7	8	48
Winant	9	9	8	8	9	9	52

REMARKS.—Those who grow berries solely for market will pay no attention to quality, for—I regret to say—quality counts zero in the market, while attractiveness (including size and color) counts everything. Those, on the other hand, who grow berries for their own use only will look at good quality, hardness, and productiveness, rather than for large size and brightness of color.

There are some characteristics of the above named varieties not noted in the table which should have an influence in determining upon a selection. The Turner is a few days earlier in ripening than either of the others. It is followed in two or three days by Thwack and Winant, then comes Reliance, and latest the Cuthbert. The Reliance continues in bearing a little longer than any other sort of red raspberries. The crop of Reliance is but two-thirds ripened at this date (July 18), whereas Turners

gave their last picking for the season two days since.

All these varieties sprout from the roots plentifully, and the young plants coming up between the rows must be mercilessly destroyed, or the "patch" will soon "run to waste."

Of black-cap raspberries, the Gregg still takes the lead, though the canes were sadly damaged last winter—a rare exception to its hitherto uniform hardiness.—O. B. GALUSHA, in *Prairie Farmer*.

BOOKS AND PERIODICALS.

THE MONTREAL WITNESS

Is presenting a picture to each subscriber to the weekly edition, and two to each subscriber to the daily. They are stirring pictures of military life—the one a battle scene, and the other a very suggestive after the battle roll-call.

E. P. ROE'S CATALOGUE OF SMALL FRUITS AND GRAPE VINES for the Spring of 1882—

Gives a concise description of a large number of Strawberries, Raspberries, Blackberries, Currants, Gooseberries and Hardy Grapes. He speaks in very high praise of the Bidwell Strawberry.

AMERICAN AGRICULTURIST.

The January number of this long-established monthly, which now enters upon its fortieth year, is promptly to hand, full of illustrations and information interesting to every farmer and gardener. Issued by the Orange Judd Company, 751 Broadway, New York, at \$1 50 per annum.

JOURNAL OF THE AMERICAN AGRICULTURAL ASSOCIATION

Is published quarterly. The last number that has reached us is the one for July and October, 1881. It is full of interesting papers, on such topics as Agricultural Instruction for the Young; the Railroad and the Farmer; Preventable Losses, &c. It is published by the Association, at 127 Water St., New York, price \$2 00 per annum.

THE AMERICAN MONTHLY MICROSCOPICAL JOURNAL, edited and published by Romyn Hitchcock, F. R. M. S., No. 53 Maiden Lane, New York, at one dollar per annum—

Is replete with information for the microscopical student, and some of its articles full of interest to the general reader.

THE GARDENER'S MONTHLY.

The January number for 1882 of this valuable horticultural journal is to hand. It is replete as usual with interesting information concerning new and rare plants and fruits. Published by Chas. H. Marot, 814 Chestnut Street, Philadelphia, Penn.

AMERICAN WINE AND GRAPE GROWER.

Devoted to the culture of the vine, wine-making, and kindred industries. Is published monthly, at 20 Vesey St., New York. Subscription price, \$2 00 a year. The December number has a very interesting paper on the pomological resources of Texas.

NOTES FROM SUNNYLAND, on the Manatee River, Gulf Coast of South Florida.

A very interesting little book, of some eighty pages, by Samuel C. Upham, of Braidentown, Flor., giving some stirring incidents in the early history of that region, and an account of the climate and fruit productions of that part of the State. He tells us that the first pound of coffee grown in the United States was raised at Fogartyville, Flor., in 1880, by Madame Julia Atzeroth. Also that the fruits grown there are the orange, lemon, lime, guava, pomegranate, persimmon, olive, almond, &c. The lowest temperature was 38°, and the highest 96°, during the year 1880. He claims that South Florida will one day supply the world with oranges, and that of better quality than those now brought from the Mediterranean.

The little people have no reason to complain that they are overlooked by

writers or publishers now-a-days. We have before us four publications especially designed for their amusement and instruction, published by D. Lothrop & Co., Boston, Mass. They are—"Wide Awake," an illustrated monthly magazine, for \$2 50 a year, intended for the larger young people; "Babyland," a monthly at 50 cents a year, for the very little ones; "Little Folk's Reader," a monthly at 75 cents a year, for primary schools and kindergartens; and "The Pansy," which is issued weekly at 50 cents a year. These are all beautifully illustrated, and printed in the best style, and abound with interesting stories that cannot fail to please the young readers.

THE SOUTHERN CULTIVATOR.

We have received the January number of *The Southern Cultivator and Dixie Farmer*, the oldest, as it is the best, agricultural journal in the Southern States. It is now published by Jas. P. Harrison & Co., of Atlanta. Dr. W. L. Jones, for years the editor of this popular journal, retains his position; Dr. J. S. Lawton is the associate. Under this management, *The Southern Cultivator* will not only maintain its former high standard, but, with the assistance of ample capital and increased facilities, and contributions from the most eminent and popular writers on Agriculture in this country, will attain a higher standing than ever.

The number before us is a gem. No journal of its kind can excel it in the value of its reading matter, the beauty of its illustrations, and its adaptation to the demands of progressive Southern agriculture. The illustrated title page is the finest of the kind we have ever seen. *The Southern Cultivator and Dixie Farmer* should be read and studied by every farmer and planter in the South. The terms, \$1 50 a year, with special rates for clubs, are remarkably low.

THE USE OF FLOWERS.

God might have made the earth bring forth
Enough for great and small,
The oak-tree and the cedar-tree,
Without a flower at all.

We might have had enough,—enough
For every want of ours,
For luxury, medicine, and toil,—
And yet have had no flowers.

The ore within the mountain mine
Requireth none to grow,
Nor does it need the Lotus flower
To make the river flow.

The clouds might give abundant rain,
The nightly dews might fall,
And the herb that keepeth life in man
Might yet have drunk them all.

Then wherefore, wherefore were they made
And dyed with rainbow light,
All fashioned with supremest grace,
Upspringing day and night?

Springing in valleys green and low,
And on the mountains high,
And in the silent wilderness,
Where no man passeth by?

Our outward life requires them not,
Then wherefore had they birth?
To minister delight to man—
To beautify the earth.

To comfort him, to whisper hope
Whene'er his faith is dim,
For whoso careth for the flowers
Will much more care for Him

MARY HOWITT.

PAPER BAGS FOR GRAPES.—George W. Campbell says that further experiments with paper bags of thin manilla on grapes during growth and ripening, show that they preserve against birds and rot. The bunches should be previously thinned out, to make the bagging easy. The grapes ripen perfectly.—*Country Gentleman*.

THE MAMMOTH PEARL POTATO.—We cut into single eyes and planted one-half bushel of Mammoth Pearl potatoes last spring, after the middle of May, and the first of October we dug from same 36 bushels of very large, smooth, white potatoes. All who saw them growing were astonished at the vines, which completely covered the ground, but when they saw the yield they opened their eyes in wonder. Such beauties had never before been seen in this or any other country. The beauty of these potatoes is this: there is not a hollow or rotten one in the lot, and they are such rank growers the bugs can't catch them.—A. W. F., in *Fruit Recorder*.

SQUASHES to keep well must first be well ripened; second, they should be gathered before heavy frosts come; third, should be well dried; fourth, the shell should be well glazed over, and while it need not be thick it should be hard; fifth, they should be kept where the temperature is very even, never very cold, or very hot; sixth, in handling, great care should be taken not to bruise them—this is of the highest importance.

WE are informed by G. H. Miller, of the *ad-interim* committee, that the Cumberland strawberry, in addition to its large size, handsome form and good quality, has been successfully shipped from Barnesville to Chicago (some 400 or 500 miles), arriving in fine order, and selling as high as \$9.60 per bushel. As it has commonly been supposed to be too soft for long conveyance, this fact gives it additional value.—*Country Gentleman*.

STRAWBERRIES IN IOWA.—A correspondent of the *Prairie Farmer*, in Southern Iowa, says the Sharpless, Great American, Col. Cheney, Lincoln and Longfellow have all failed with him, while the Charles Downing, Kentucky and Crescent succeed well, and the old Monroe Scarlet, raised by Ellwanger & Barry, of Rochester, holds its own against weeds and neglect, and has borne well every year for twenty-five years.—*Country Gentleman*.

IMPROVEMENTS IN FRUIT DRYERS.—Mr. David Britton, of Jonesborough, Ill., has patented a fruit dryer, which has superior drying facilities and offers increased conveniences for inserting, changing, and removing the fruit. It consists of a drying house having a separable strip in its roof to provide for the escape of the moist air and to promote circulation of the heated air, a furnace for heating the incoming air; guiding, and distributing plates for the air to, at the sides of, and above the furnace; a series of tracks of ways on opposite sides of the interior of the drying house and arranged one above the other to support tiers of drawers which hold the fruit to be dried; and separable end frames having crossbars and hinged doors to provide for the entry and removal of the drawers with very little waste of heated air.—*Scientific American*.

THE

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MARCH, 1882.

[No. 3.]

THE CHINESE PRIMROSE.

The colored plate presented to our readers with this number will enable them to become acquainted with this pretty flower, if perchance they have not already become familiar with its bright, cheery face. Of all the window plants we cultivate, none repay so profusely the care bestowed by their abundant flowering all the winter long as this, and we have often wondered that it is not more generally grown by those who are fond of winter-blooming plants. Mr. Vick states in his monthly magazine that the reason why the Chinese Primrose has not come into more general use is that it requires several months to bring it to perfection from the seed, and that care and attention are needed during this period of the plant's life to keep them in a healthy condition; just as though any true lover of flowers was not willing to give all the attention needed to the perfect development of his favorite flowers. Has it not been rather a want of knowledge of the requirements of this particular flower, than any unwillingness to give the required care which has prevented it from becoming a general favorite. Believing this to be the true

state of the case we give our readers Mr. Vick's directions for its cultivation, assuring them that there is no better authority on this subject on this side of the Atlantic:

"Seed should be sown any time from February until the first of June, and, if sown at different times, the plants will come into bloom in succession. Soil for the seed is best prepared by taking some good leaf-mold and about twice as much fibrous loam, made pretty fine, mix them together, and add enough sharp, fine sand to make the whole light and porous. A five or six-inch pot may be used; fill in the bottom with coarse drainage, and then the soil to a height within an inch or an inch and a half of the top, and press it down. Over this sprinkle a layer of fine sand, and then water it through a fine rose; after the pot has stood awhile to drain, the seed may be sown on the surface, and have the lightest possible covering of fine sand. Place a pane of glass over the pots and stand it where it will get the light, but not the sun, and where a pretty steady temperature, ranging near 65°, will be maintained. If the atmosphere is moist, but little water will be needed until the plants appear, but if the pot should become dry, water it by standing it in a dish of water, allowing the moisture to soak upwards into the soil,

thus avoiding any disturbance of the surface. In about two weeks the little plants will begin to make their appearance, and after the third leaf has appeared the plants may be pricked out into other pots, provided with soil the same as described. Cover the plants with glass, and keep in a light, shady place, as before. Water as may be required, but only enough to keep the soil gently moist, and be careful to avoid wetting the leaves. After a few weeks growing in this way, transplant the plants singly into quite small pots, using the same soil as before. Keep the plants in the same temperature as at first, and, if the season admits of it, place them in a cold-frame; give a little air every day to prevent the plants from becoming drawn. In potting, the plants should be set low in the pot, for, as they grow, they stretch up above the soil and require a little more to be placed about them. As soon as the plants begin to grow well, repot into five-inch pots, adding a third part of old cow-manure to the soil, and keep them in the cold-frame or a spent hot-bed until they show their flower-stems. The single varieties are much the best for house or window culture."

Such are the freshness and beauty, the naturalness and air of vivacity about these flowers, that one never tires of them. To-day you look at them with pleasure, to-morrow they greet you with a look of welcome, and you linger even longer than yesterday to admire their winsome grace.

One thing more should be said of their cultivation, and it is this, do not expose them to the full blaze of our summer's sun, but during the summer keep them on the north side of a high fence or of some building. When the flower buds have formed, be careful not

to wet them when watering, as when kept too damp they may decay.

We trust our readers will be able to grow this beautiful flower abundantly, and may experience the pleasure which the writer has enjoyed from December till May in the possession of its continuously charming bouquets of bloom.

ROAD SIDE FENCES.

The Committee to whom was referred the Report of the Committee on Fences at our last winter meeting, with instructions to furnish such facts, figures or circumstances, as led them to the conclusions arrived at in that Report, now respectfully submit:

1. That every farm of 100 acres, divided in the usual manner, will have about 1,200 rods of fence thereon.

2. That one of the best and most economical fences now coming into general use is a straight one, made of cedar rails and posts. It is usually built five rails high, the ends of the rails being inserted into augur holes in the posts, which are set firmly in the ground in line, twelve feet apart.

3. The cost of such a fence for a farm of 100 acres will be about as follows:

8,250 Rails at \$52 per 1,000	\$429 00
1,650 Posts at 18 cents each	297 00
Digging holes and setting Posts at 10 cents each.....	165 00
Boring holes in Posts at \$1 per 100 holes	82 50
Cutting and turning Rails at \$1 per 100	82 50
Setting up the Rails at 10 cents per length of 5 Rails	165 00
16 Gates, hung and painted at \$6 each	96 00

Total \$1,317 00
or about \$1 30 per rod. Such a fence is estimated to last about 25 years. The gates about 10 years.

4. The annual charge for permanent

maintenance of such a fence would therefore be :

Interest on (say) \$1,300 at 6 per cent.....	\$78 00
Estimated average annual charge for repairs and for permanent maintenance at 6 per cent.	78 00
Extra do., do., for gates at 10 per cent.....	9 60
Rent of land lost by fence 6 feet wide = 4.36 acres at \$5 per acre .	21 80
Total	\$187 40

The foregoing estimate has been made with the assistance of a thoroughly practical farmer in the Township of East Whitby; and we are of the opinion, that although the cost of such a fence must necessarily vary much in different localities, the cost of material and labor here submitted may be regarded as a fair average for the whole Province.

5. Your Committee are of the opinion that the kind of fence as usually constructed in the back country, involves a much greater annual expenditure than the one here described. A common snake fence of the same length will require about 26,000 rails, and are usually made of Basswood, Pine, Elm, Ash, &c. Supposing these to be hauled a distance of one mile, they will cost about

\$30 per 1,000, or	\$780 00
Labor in setting up at \$4 per 100 rods.....	48 00
Preparing and setting 16 sets of Bars at \$2 per set.....	32 00
Total	\$860 00

Such a fence is estimated to last about 10 years. The bars about half that time. The annual charge for such a fence would therefore be :

Interest on \$860 at 6 per cent.	\$51 60
Estimated average annual charge for repairs and for permanent maintenance at 15 per cent., or..	129 00
Extra do., do., for Bars at 20 per cent.....	6 40
Rent of land lost by fence 12 feet wide = 8.72 acres at \$5 per acre .	43 60
Total	\$230 60

Showing an annual expenditure on a farm thus fenced of \$43 20 for permanent maintenance greater than on the fence as first described.

6. The estimate, therefore, in the second paragraph of the previous Report of two dollars per acre per annum seems a moderate one, and your Committee are of the opinion that if farmers were not compelled to fence against their neighbours' cattle, they could protect their crops and their own cattle by live fences, the trees forming wind-breaks, by the use of hurdles and otherwise, (which would add much to the general beauty of the country, and thereby greatly enhance the value of the land), at less than one quarter of the yearly expenditure above shown, or—in other words—that the farmer of every 100 acres of land in Ontario could realize a clear yearly profit over and above what he is now doing (if every owner of stock were compelled by law to keep them enclosed) of \$150.

7. That the foregoing figures, showing the unnecessary but compulsory annual expenditure of \$1 50 per acre for all cultivated land by the unwise laws at present in force in this Province, have been carefully prepared, and therefore, by applying them to communities of farms, we find that the annual loss from this cause to the large Township of London, in the County of Middlesex, having a cultivated area of nearly 70,000 acres, is over \$100,000. The Township of Mariposa, in the County of Victoria, having cleared land to the extent of nearly 48,000 acres, loses \$72,000 annually. The Model Farm at Guelph loses by the same means annually about \$800. These figures when applied to the whole Province assume gigantic proportions, for we find from Official Reports that there are at the present time between eleven and twelve millions of acres under

actual cultivation. The total loss therefore to the farmers of Ontario must be upwards of \$16,000,000 per annum.

THOS. BEALL, *Chairman.*

P. E. BUCKE.

THOS. HALLIDAY WATT.

CORRESPONDENCE.

ENGLISH SPARROWS.

Toronto, Jan. 28, 1882.

I enclose you an article taken from an Australian paper concerning the destructiveness of the English sparrow in that Colony, and would suggest that some steps be taken immediately to suppress their increase in this country, as the destruction by birds in this city is beyond conception. Chap. 29, Statutes of Ontario, sec. 81, enacts that "persons may destroy the robin and cherry bird on their own premises during the fruit season." Now these birds are harmless in comparison with the sparrow, and yet least harmless during the fruit season; therefore by adding the sparrow it would not meet the requirements necessary, as the sparrow is most harmful in winter and spring before the blossoms have burst. There should therefore be added, after the words cherry bird, "and may destroy the English sparrow at any time." I think if the above suggestions were made to some member of the Ontario Parliament now sitting, who is interested in horticulture, there would be no difficulty in introducing the amendment.

Yours, &c.,

J. NEWHALL.

To the Editor of The Canadian Horticulturist.

SIR,—Herewith I send you an abstract Meteorological Report for Lindsay for the winter of 1880-81, compared with abstracts from the reports issued from the Observatory at Toronto for that place.

If similar reports could be obtained from several places—say from St. Catharines, Hamilton, London, Goderich, Guelph, Owen Sound, Orillia, Peterboro', Belleville, Kingston, and Ottawa—would it not furnish data whereby almost positive information would be furnished to intending fruit-growers as to the success or non-success of cultivating certain fruits in their neighborhood? For if given kinds of fruit are successfully grown in a locality where the climate is known, surely the same kinds of fruit may be grown in any other neighborhood having like climatic conditions; and, if experts fail to grow certain fruits successfully in a given neighborhood, novices may not expect to succeed with the same varieties under similar conditions elsewhere.

Perhaps the publication of this report may cause others to view this subject in the same way, and possibly induce others to furnish similar reports.

I hope soon to see this subject taken up by our Association, and accorded that consideration its importance deserves, and an application made to the Dominion Government to cause a report, compiled from the reports, from all important points, not only in Ontario, but throughout the Dominion, to be issued periodically from the Meteorological Office at Toronto. A knowledge of the climate of our vast Dominion, and its possibilities for Agriculture, Horticulture, Pomology, and possibly for Stock-raising, can only become general by this or some kindred means.

Much valuable information may now be obtained from the Observatory at Toronto, and is always willingly given by the obliging officers of that institution, but it is scarcely probable that a periodic report as indicated could be issued by that already over-taxed institution.

Lindsay, Ont. THOS. BEALL.

GENERAL METEOROLOGICAL REGISTER FOR THE WINTER OF 1880-81.

LINDSAY.—Lat. 44° 19' 15" North. Lon. 5h. 15m. West. Approximate elevation above the Sea 876 feet. Compared with

TORONTO.—Lat. 43° 39' 4" North. Long. 5h. 17m. 33s. West. Approximate elevation above the Sea 350 feet.

	PLACES.	October, 1880.	November, 1880.	December, 1880.	January, 1881.	February, 1881.	March, 1881.	April, 1881.
Mean temperature	Toronto ..	45.0	30.3	21.4	16.7	20.0	30.1	40.0
Mean temperature	Lindsay ..	42.32	26.10	16.0	9.5	15.9	27.9	43.4
Highest temperature for month	Toronto ..	75.4	57.0	48.5	37.7	42.9	42.1	80.6
Highest temperature for month	Lindsay ..	79.0	58.6	42.0	36.1	45.8	49.2	76.6
Date of highest temperature for month	Toronto ..	11	5	5	13	10	9	26
Date of highest temperature for month	Lindsay ..	11	5	5	13	17	16	24
Lowest temperature for month	Toronto ..	26.3	3.7	— 8.3	— 4.8	—15.1	10.8	13.9
Lowest temperature for month	Lindsay ..	17.4	—9.9	—16.0	—24.4	—27.8	3.4	6.0
Date of lowest temperature for month	Toronto ..	28	24	30	15	1	11	2
Date of lowest temperature for month	Lindsay ..	28	14	10	24	2	12	6
Warmest day of the month	Toronto ..	3	5	5	13	10	17	24
Warmest day of the month	Lindsay ..	11	5	5	13	9	16	24
Mean temperature of warmest day of the month.	Toronto ..	59.97	50.53	36.52	33.32	37.93	36.52	61.58
Mean temperature of warmest day of the month.	Lindsay ..	53.6	52.80	33.15	32.50	39.58	37.22	60.8
Coldest day of the month	Toronto ..	28	22	29	14	2	1	4
Coldest day of the month	Lindsay ..	28	23	29	14	2	1	4
Mean temperature of warmest day of the month.	Toronto ..	32.47	10.85	— 0.82	5.25	— 7.07	15.95	20.37
Mean temperature of warmest day of the month.	Lindsay ..	26.80	.30	— 7.75	— 8.48	—10.45	9.30	15.16
Mean maximum temperature	Toronto ..	52.86	35.93	26.74	23.80	26.99	35.53	48.73
Mean maximum temperature	Lindsay ..	53.72	33.81	21.57	19.19	25.00	35.48	49.13
Mean minimum temperature	Toronto ..	37.17	23.78	15.40	7.89	11.28	24.65	30.40
Mean minimum temperature	Lindsay ..	34.06	18.85	9.10	— 2.50	3.95	20.83	25.94
Mean daily range	Toronto ..	15.69	12.15	11.34	15.91	15.71	10.88	18.33
Mean daily range	Lindsay ..	19.30	26.10	12.48	21.70	20.60	14.66	23.29
Greatest daily range	Toronto ..	29.1	22.6	23.9	27.8	29.2	19.4	40.9
Greatest daily range	Lindsay ..	39.7	31.1	27.1	47.8	38.9	31.2	36.5
Least daily range	Toronto ..	4.9	6.3	2.3	4.6	4.7	2.4	8.6
Least daily range	Lindsay ..	6.4	4.5	2.7	5.4	5.3	2.3	11.3
Monthly range	Toronto ..	49.2	53.3	56.8	42.5	58.0	31.3	66.7
Monthly range	Lindsay ..	61.6	68.5	58.0	60.5	73.6	39.5	69.8
Day on which the greatest amount of snow or rain fell	Toronto ..	4	6	1	21	9	19	26
Day on which the greatest amount of snow or rain fell	Lindsay ..	24	6	1	22	12	4	27
Quantity of snow or rain on that day in inches .	Toronto ..	.96	1.01	.37	.63	.57	1.72	.05
Quantity of snow or rain on that day in inches .	Lindsay ..	1.11	1.11	.70	.70	.46	1.10	.28
Number of days on which snow or rain fell	Toronto ..	14	22	20	19	15	15	7
Number of days on which snow or rain fell	Lindsay ..	13	17	9	14	13	10	5
Total depth of rain and melted snow for month in inches	Toronto ..	3.54	2.65	1.11	2.13	2.44	3.67	.09
Total depth of rain and melted snow for month in inches	Lindsay ..	4.03	3.87	1.95	3.00	1.67	2.56	.78

BLACK SPOTS ON APPLES.

Prescott, Jan. 10, 1882.

I have no doubt that I wrote the article mentioned in your letter of the 9th for the *Canada Farmer*. The fruit of several of my apple trees had been affected with a black taint when they were about half grown; they then shrank and became worthless. I remembered a remedy I had read when a boy for caterpillars and other worms on apple trees, and I thought I would try it on my trees, as I was of opinion that the taint was occasioned by some kind of poison in the sap, and not from the attacks of moths in the fruit. Since that time my apples have been perfectly free from the taint—indeed the change took place the first season after applying the remedy. I inserted the sulphur early in the spring, before the sap began to ascend into the branches. I cannot see that the trees have been injured by the holes having been bored into them; yet I think grafting wax is preferable to wooden plugs—anything to *exclude the water*.

The only enemy that has baffled me is the *Codlin Moth*, and until last season I had almost given up in despair, for he is an insufferable nuisance; and if these moths cannot be conquered we shall lose in quantity and quality immensely.

For the *tent* caterpillar I tie a cotton swab to the end of a long pole, dip it in a pail of pretty strong lye, and easily wipe the tents off in the morning. Last spring I found only *two* tents on all my trees.

The apple tree *Borer* must be looked after, otherwise he will destroy the trees—ornamental as well as fruit.

My only enemy *now*, as I said before, is the *Codlin Moth*. However, I think I have a remedy for him also. Last spring, early in April, I tried the experiment on two trees—Duchess of

Oldenburgh and McLean—of tying tightly around their trunks, about 18 inches from the ground, with twine, a piece of cotton cloth about three inches wide; then I daubed the cloth thoroughly with printer's ink, so that no insect could crawl up the trunk without sticking fast in the ink. Although heretofore my Duchess had been affected as much as the other trees, every apple was sound and perfectly mature, and the largest crop I ever had. The McLean tree had a few wormy apples, which I could account for: I was taken sick and could not attend to more. And here let me say that the *Duchess of Oldenburgh* is the surest and most valuable early tree for the locality—the *Brockville Beauty* next. The *Red Astrachan*, although hardy, will not hold its fruit, and the apples burst as soon as ripe. The *Early* or *Yellow Harvest* is too tender for this climate. These trees have all been thoroughly tried. *Fameuse*, if kept clean of borers, in my opinion stands above all others as a fall dessert apple. *Rhode Island Greening*, *Baldwin*, and *Esopus Spitzenburgh*—all magnificent apples, and superior winter apples to all others that I know—are not reliable, being too tender. They have all been grown here, and are not now to be found.

The only enemy I notice to the Plumb is the black knot. I have lost a number of the old Blue Plumb family by it. By the use of coal and wood ashes, and washing with salt brine and sometimes lye, I have kept the black knot off my Jefferson and Egg plumbs pretty well; but I am not sure yet that I have fully succeeded. I have not yet discovered the *cause* of the *black knot*. If I knew the cause I would not rest till I found out a cure. No doubt it is a *fungus*, and not the effect of insects. I think it is a poison in the sap, which, perhaps from overstimulation with manure bursts the

bark, and then, unless cut out at once, increases from one tree to another until the tree is destroyed. When the *black knot* begins on the main trunk of the tree it is difficult to arrest its progress. I have a dozen or more very fine plumb trees—all very superior—which I intend to nurse and cultivate so as, if possible, to bring them up to the standpoint of fifty years ago.

I have tried pears of various kinds, but all have failed. A few years ago I obtained from New Hampshire six young chestnut trees. They all died the first year.

To conclude, if any member of the Fruit Growers' Association, or any one else, can tell us *why* the Codlin Moth lays its egg in the apple blossom—whether it goes there to extract honey or for any other purpose—I think we could soon invent a scheme to *circumvent* him. Next spring I intend to try the cotton rag and printer's ink on all my apple trees, and if successful again shall not fail to report.

Yours very truly, S. B. MERRILL.

The above was received from Mr. John Croil, who remarks that Mr. Merrill's plan is this:—"Early in February, with a three-quarter inch augur, bore half through the trees diagonally about two feet from the ground, fill the hole with sulphur, and cover the orifice with grafting wax or with a wooden plug."

BEST CODLIN MOTH TRAP.

I set two traps on the 20th of last August and caught over one thousand moths in one night. The trap is a glass lantern set in a tin pan of water an inch or more deep. The light attracts the moths and they fly around the lantern, and when they strike the water they are caught, as they are helpless when they once get in the water.

In trimming the lanterns use less or more oil, according to the length of time you want them to burn. They should be set on something two feet or more from the ground.

I intend to use a number of the traps this season, commencing when trees are in blossom, for the moths are numerous and destructive.

W. C. RAYMOND.

Dickinson's Landing.

LETTER FROM THE HON. MARSHALL P. WILDER.

PRESIDENT OF THE AMERICAN POMOLOGICAL SOCIETY.

"The present number of the *Canadian Horticulturist* is not only increased in pages, but its contents are of a very useful character. This may be called the Grape Number, as it illustrates in a very lucid manner a system of training that any cultivator may understand. Plan and system are the foundations of success in every well ordered effort in life. You have done well to give us so much in one issue on this important branch of pomology, creating as it will even more interest in the future than it has in the past. I am glad to see that the Wilder grape succeeds so far north as the 47th parallel. I have ever had a good opinion of it, and it was my choice out of all Mr. Rogers' hybrids to have my name affixed to. Also am glad to see that the Champion is being properly depreciated. We must keep up the standard of quality, and when we can have a grape as good and as early as Moore's Early, we can dispense with the Champion, as I have done. We were very glad to see your President Dempsey at Boston, and your honored former President, Rev. Burnet; also, I am gratified that you thought well of what I said in my address before the American Pomological Society on the Grape. No country has such good promise for its successful culture.

REPORT ON FRUIT TREES, &c.

Appin, Feb. 5th, 1882.

As it seems to be the general practice to give a short history of the trees and plants received by the members of the Fruit Growers' Association, I will do so. The pear trees are doing well, excepting the Beurre Clairgeau; Clapp's Favorite blossomed nicely last spring, but bore no fruit; Beurre d'Anjou has fruited twice; Flemish Beauty is growing nicely. My apple trees are growing nicely; Grimes Golden has not fruited as yet. My Burnet grape vine makes but poor growth as yet; my other vines are all dead long ago. My Hales peach was dry and withered up when it came to hand, being taken up as I believe in the fall of the year before it was sent out, and never started into growth at all. My Blackberry never came to anything, nor the Raspberry either. The last Raspberry has made a good growth since planted. My Gooseberry bush never started into growth in the spring. Planting small fruits in the fall should be avoided. All nursery trees and plants should be dug up with more care than is generally bestowed on them. In taking up in the nursery, all the fibrous roots are as a general rule left in the ground and only the stock sent out. I would prefer a smaller tree or plant, provided it had a good root left to the tree. This is a serious fault with many nursery-men. My Hydrangea Paniculata grew well in the first part of the season; it put out buds for flowers, but the dry weather prevented it from flowering, and in September its leaves dried up. I do not know if it is dead or not. Mr. Lotan's tree has done well; his Raspberry is doing nicely; his potatoes have turned out well. I have given a brief resume since my last report. My Glass seedling plum has not fruited yet; the blossoms have dropped off; this tree is a very free grower; if the

fruit can compare with the growth of the tree it will be a great acquisition to the plum orchard. I am glad that the Directors allow of a choice; it is in the right direction.

The *Horticulturist* is getting to be a very useful pamphlet to me. I begin to look for it regularly every month with its discussions and notices of fruits, besides its being so handy a reference book, with its index to the yearly volume. It is worth more than the whole cost to have the opinion of those who are in a position to know the merits or the demerits of those new trees, fruits, &c., peddled around through the country by unscrupulous men. If there were more copies of the *Horticulturist* taken by the farmers around here there would not be such big shaves got from them for new fruit trees at enormous prices.

Yours truly, JOHN MCINTYRE.

ALGOMA.

Blind River, Dec. 17, 1881.

My Wealthy Apple which came to me from the Association has done well, although it was about two weeks on the way in the mail bags before I got it, and I give thanks for the good condition it was packed in so as to stand the long mail transit. We have had a good year for wild fruits. Cranberries, blue berries, raspberries and strawberries were all very plentiful this year, which has been of great benefit to the new settler of this out of the way part of the world. We also have had good crops of all kinds of grain and roots. Corn has done well, and I tried a few rows of the Early Amber sugar cane, which was planted too late—the second of June—and grew nine feet high and looked well, but was killed with frost the middle of September; but we had plenty of tomatoes, pumpkins, and squash, which matured well. I planted

a few apple trees last spring, which grew very well this summer, and I hope to report that they have stood the winter well.

Yours with respects,
W. WARNOCK.

GRAPES—POTATOES—CHERRIES.

The Delaware is the best grape grown around here. Creveling has done well with me. The Burnet has not had fair play, but promises well. The Concord, *if it is the Concord*, has never ripened. I have about a dozen other kinds not tested: Moore's Early, Salem, Wilder, Champion, Telegraph, Rogers' No. 3, 9, Brighton, &c.

My taste is depraved enough to like the Hartford; one advantage it has, at least, it always ripens. We always winter cover our vines with a few inches of earth.

Gooseberries I used always to train on a single stem; many recommend five or six stems, renewed yearly; would like your advice on this. Mr. Tait says he uses sulphur to prevent mildew with success.

The Dempsey potato did well with me, from a barrel on sod, no manure, I had 70 bushels (we are using them now, excellent). Beauty of Hebron good, very early and prolific.

I let the Early Vermont take the place of the Early Rose with me. Very like it, but I think a little earlier and more productive. Peerless I find good for spring use, and a fair cropper. I have seed for a trial of the Late Rose next spring; neighbors speak well of them.

Cherries which used to be with us a sure crop till the birds claimed them, have been entirely barren the last few years. Is this general?

JOHN CROIL.

Aultsville.

REPORT ON TREES, &c., RECEIVED.

With reference to Mr. Geo. Elliott's report on the trees, &c., he has received from the Association (Vol. V., No. 1, p. 14), I beg to observe that I have succeeded in raising every one of the various trees received from the Association since 1874, the year that I joined.

The Salem Grape does not bear much fruit, and the bunches are small; what there are are very good to eat. Swayzie Pomme Grise (1875) is now a handsome young tree, and fruited twice, two or three each year; rather small, but good. Glass Seedling Plum (1876) arrived nearly dried up and dead, but budded out at last into many branches, though so late that they were mostly winter killed; it is, however, now a fine tree, and I trust will bear this year. Diadem Raspberry and Strawberry (1877) grew well, but neither had much flavor. Burnet Grape (1878) has grown well and fruited twice; bunches small, and most of the berries not larger than peas, a few only on each bunch full size; a little sharp, but very nice flavor. Arnold's Ontario Apple (1879) growing well; bore three apples in 1881; small, rather sour; trust they may improve. Saunders' Raspberry, No. 72 (1880), made fine shoots, like a black cap; fruit rather small. Brighton Grape (1881) made one small shoot.

When gathering Asparagus is it (even) possible to *pull* the stalks up, as recommended in the poetical effusion on page 24 (third, last stanza)? I should think it would injure the crown of the root. I always cut mine with a sharp knife, but carefully, so as not to destroy any not yet above the surface.

G. (COBOURG).

CULTIVATION OF CELERY.

DEAR SIR,—I noticed in the reports of the proceedings of the late meeting of the Fruit Growers' Association, that one of the subjects under discussion was the best method of the cultivation of celery.

It was remarked by one of the members that the ravages of the insect was one of the difficulties to be encountered in raising it.

I have the same complaint to make. For several years I endeavored with great care to raise this delicious vegetable, but was unsuccessful in consequence of the destruction caused by an imperceptible insect, so I gave up the attempt.

The year before last I saw a remedy given in the *Fruit Recorder*, edited by A. M. Purdy, Esq., of Palmyra, N. Y., and was determined to make another effort, which, I am happy to say, has proved entirely successful for the past two seasons.

The remedy is to water the celery once a week with soap suds from the wash tub, and afterwards dust the plants with a little of the flour of sulphur, which will entirely destroy the enemy. This should be continued throughout the season.

Yours truly,

WILLIAM M. MURRAY.

Niagara, Ont.

MULBERRIES.

Will you be kind enough to give me all the information you can about the Mulberry tree, as to its hardiness (1), productiveness (2), and quality of fruit (3).

JESSE WELDON.

Oakwood.

1. The Black or English Mulberry is not perfectly hardy in all parts of Ontario. It will do best where the

peach is successfully cultivated. The new American Mulberry promises to be much more hardy. The Russian Mulberry should be hardy as far north as Sault Ste. Marie.

2. All varieties are exceedingly productive.

3. There is some difference in the flavor of the different sorts, but the three sorts named above are highly esteemed for fine quality.

WHAT OUR SUBSCRIBERS SAY
OF US.

I highly prize and esteem your periodical, and consider it well worth the money without any premium.

WM. HOOD.

Valleyfield, Pr. of Que.

I was well satisfied with the Potatoes I got last spring. I had four heaped pails full from the pound.

WM. S. INKSTER.

Maxwell.

Please tell your Association to still continue to agitate the prohibition of cattle being allowed to run at large.

JOHN BOTHWELL, Sen.

Springville.

I am very much pleased with the CANADIAN HORTICULTURIST, it contains information very useful to a fruit grower.

WILLIAM A. WALLIS.

Humber.

I am very glad to welcome the CANADIAN HORTICULTURIST in its new and enlarged shape, and hope that the increased information it affords will prove a benefit to the Association, and be the means of enlarging the number of its subscribers, as it so much deserves.

G. WILGRESS.

Cobourg.

I am glad you have seen your way to the enlargement of the paper. It will help to popularize and extend the usefulness of the Association.

T. C. WHEATLEY.

Sarnia.

Have received the January number of the HORTICULTURIST, with which I am greatly pleased. It has been the means of diffusing much useful information both for the garden and orchard, and I much wish the usefulness of your periodical greatly extended. I have been much benefited myself, and am sure others also have profited by its perusal.

GEO. STRAUCHON.

Woodstock.

Enclosed is my subscription for the CANADIAN HORTICULTURIST. It is a little book I am well pleased with, and consider the money well laid out, for the information to be got from it is very valuable to those who take a delight in gardening, and I should be very glad to see it grow larger, even if it cost more. I look upon it as a cheap Dollar's worth.

ALLEN CHAPMAN.

Cayuga.

I will say that I think more and more of the good work done by the Fruit Growers' Association by every number of the *Canadian Horticulturist* I receive, and I look for it anxiously every month. I think it will be more interesting this year than ever, as it is so much larger than formerly; and it will help us to make our homes beautiful by what is shewn us in those colored plates. A great many of us must see to be convinced, and I believe there are a great many who have seen the plate in the January number who will appreciate the *Gladiolus* a deal more than they ever did before.

What I have received from the Association has done well.

WILLIAM JONES.

Box Grove.

Your valuable "Report" duly to hand, also the CANADIAN HORTICULTURIST. These excellent publications are brimful of important information for the horticulturist, fruit grower and entomologist. Our Southern people know but little of the capabilities of the Dominion of Canada. Even the Northern States are excelled by you, especially in the *keeping qualities* of fruits.

JAMES FRITZ.

Albermarle Co., Virginia.

I was very much pleased with the January number for this year, and I trust the Society will meet with further success. I wish I could make more farmers believe it is to their interest to subscribe. As the Society has now taken up the subjects of growing flowers and shrubs, I think the old members might make an effort and get a few ladies to join, or better still, subscribe for an extra copy, and make some lady friend a present of it.

CHAS. JAS. FOX.

Delaware.

I am glad to add my testimony with others to the great good the Fruit Growers Association of Ontario is doing throughout the country. The enlargement of the HORTICULTURIST is a step in the right direction, and the Directors are to be congratulated in their efforts to popularize it. Some of the articles on various subjects are of no mean order, and reflect credit on the contributors. The valuable hints given and experiences related through the HORTICULTURIST cannot fail to be justly appreciated by those who take an interest in a department so varied and

replete with the choicest of God's precious gifts. Sometimes one is a little puzzled to arrive at a conclusion as to "what to grow," &c. The evidence as to what is the best is often very contradictory. Still there are a great many considerations which have to be weighed, such as soil, climate, drainage, &c. A certain kind of apple which would be quite successful at Toronto might be a failure at Barrie, or a Burnet Grape Vine fruitful at Niagara might be barren at Ottawa. In view of the extended operations of the Association, it might be in order for the Legislature of Ontario to increase the grant from Government. A sum of money voted for such purposes and objects as are propagated by the Fruit Growers' Association of Ontario for the benefit of the people is money well spent. I am of opinion that the time will come when such a grant will be unnecessary. When the aims and objects of the Association are better understood by the people of this Province, then the Association can easily become self-sustaining.

JAMES STEPHEN.

Toronto.

ELECTRO-HORTICULTURE.

"As regards the chemical products, carbonic acid and nitrogenous compounds, it was thought these would prove rather beneficial than otherwise in furnishing the very ingredients upon which plant-life depends, and, further, that the constant supply of pure carbonic acid resulting from the gradual combustion of the carbon electrodes might render a diminution in the supply of fresh air possible, and thus lead to economy of fuel. The plants did not, however, take kindly to those innovations in their mode of life, and it was found necessary to put a lantern of clear glass round the light for the double purpose of discharging the chemical products of the arc and of inter-

posing an effectual screen between the arc and the plants under its influence. The effect of interposing a mere thin sheet of clear glass between the plants and the source of the electric light was most striking. On placing such a sheet of clear glass so as to intercept the rays from the electric light from a portion only of a plant, for instance a tomato plant, it was observed that in the course of a single night the line of demarcation was most distinctly shown upon the leaves. The portion of the plant under the direct influence of the naked electric light, though at a distance from it of nine to ten feet, was distinctly shrivelled, whereas that portion under cover of the clear glass continued to show a healthy appearance; and this line of demarcation was distinctly visible in individual leaves. Not only the leaves, but the young stems of the plants soon showed signs of destruction when exposed to the naked electric light, and these destructive influences were perceptible, though in a less marked degree, at a distance of twenty feet from the source of light. A question here presents itself that can hardly fail to excite the interest of the physiological botanist. The clear glass does not apparently intercept any of the luminous rays, which cannot therefore be the cause of the destructive action. Prof. Stokes has shown, however, in 1853, that the electric arc is particularly rich in highly refrangible invisible rays, and that these are largely absorbed in their passage through clear glass. It therefore appears reasonable to suppose that it is those highly refrangible rays beyond the visible spectrum that work destruction on vegetable cells, thus contrasting with the luminous rays of less refrangibility, which, on the contrary, stimulate their organic action."—DR. C. W. SIEMENS, in *The Journal of the American Agricultural Association for October*.

ASPARAGUS CULTURE.

To judge from the fact that we receive more inquiries about Asparagus than almost any other vegetable, it seems that although the mysteries and secrets which were formerly considered necessary for its cultivation have long since been uncovered and proved to be detrimental rather than otherwise, there still clings to the popular mind some mysterious halo connected with the idea of Asparagus culture. And yet it necessitates less labour and expense than almost any other garden vegetable. The roots cost hardly more than the seeds for other vegetables occupying the same space, and the first expense is the only one. While Peas and Lettuce and the whole list of vegetables have to be sown every year, Asparagus yields its delicious crop year after year, without replanting, for generations.

The most frequent cause of failure with Asparagus is too close planting. Favorable soil and good roots are, of course, necessary to obtain good results, but these can amount to but little unless sufficient space is given for their development. A deep, light, sandy loam is best, but with proper preparation any garden soil can be made to produce a good crop. If so heavy and wet that water stands on the ground during winter, under-draining and deep working will be necessary before planting. On ordinary garden soil, deep plowing or spading and the working in of enough stable manure—a coating of four or five inches would not be too much, although less will do—is sufficient. If this can be done during the fall or winter previous to planting, so much the better. Where practicable, it is far better to plant the roots in long rows on one side of the garden than in short beds. A single row of one hundred and fifty or two

hundred plants, set eighteen inches or two feet apart, will give an ample supply for a family of half a dozen, and, during the height of the season, some to sell or give away to neighbors who are not so fortunate as to delight in an Asparagus-bed. When more than one row has to be planted, they should never be nearer together than three feet, and unless forced into very narrow limits, a distance of four feet is to be preferred.

After the rows are marked out and the line stretched, a ditch with one side slanting and about twelve inches deep is dug with a sharp spade. Against the smooth side of the ditch the plants are placed, and the roots spread out so that the crowns are four or five inches below the level of the ground. A handful of soil is then drawn over the roots and firmly packed down; more soil is then raked in, so as to fill the ditch to within two or three inches of the surface. In a few weeks the sprouts will appear; the ground has then to be loosened with a cultivator or a hoe, and kept mellow and clean during summer. At each cultivating some soil should be drawn into the remaining ditch, so as gradually to fill it entirely.

Often it becomes desirable to plant Asparagus without sufficient preparation having been given to the soil. In such cases, a trench may be dug eighteen inches deep and twelve or fifteen inches wide. Rich stable-manure is put into the trench and trodden down so as to fill it one-half. A layer of three inches of fine surface-soil is thrown on the manure and shaped into a ridge, with its highest point in the center of the ditch; on this ridge the roots are placed at the proper distances, the rootlets evenly spread out toward the sides and covered with about one inch of soil, which has to be

firmly packed down, especially over the lower ends of the roots; one-half of the remaining ditch is then filled in, and the rest not before the shoots have grown several inches above the level of the ground. The subsequent cultivation is the same as given above.

During the second year, no care is required except to keep the bed clear until the stalks cover the entire ground. The third year, and not sooner, the cutting may commence, but if there are any roots which have not made a very strong growth it is best not to cut from these, and in fact as soon as any plants show lack of vigor the cutting should be discontinued. Many Asparagus-beds are ruined by too long-continued cutting. We have found it a good rule to commence cutting as soon as the first stalks appear, and stop with the beginning of Strawberry picking.

Immediately after the cutting season, when the roots are enfeebled by the severe tax of having produced many times more than their natural requirement of stalks, is the best time for manuring; yet an application of fertilizers does not come amiss at any time.

The stems, which, after the cutting season, shoot up with great rapidity, should not be disturbed until they die off naturally, when they should be cut and burned. Salt is, by general consent, considered a special fertilizer for Asparagus. We have during several years applied salt to one part of our bed, and not to the other, without perceiving the least difference in the respective yields. At any rate, salt can do no harm, no matter how liberally applied. Stable-manure, bone-meal, superphosphates, and in fact almost any kind of fertilizer, and plenty of it, are beneficial to Asparagus.—*American Garden.*

PURE NATIVE WINES.

On the occasion of the recent meeting of the Fruit Growers' Association, held in the city of Hamilton, we were invited with several of the members to visit the wine vaults of Messrs. Barnes & Haskins. We were quite surprised to find that this enterprise had attained to such extensive dimensions, and that already there was a varied stock of old native wines produced from grapes grown in their own vineyards near to the city. It would seem that these gentlemen have been quietly perfecting these wines for some years, until now they compare favorably with the best imported, with this decided advantage that they are pure, free from adulteration of every sort, and not strengthened by the addition of spirits. We all know how difficult it has long been to get unadulterated wines, and that much of the so-called wine of commerce is only spirits colored and flavored to imitate the wine whose name it bears; and now that the phylloxera has made such wholesale destruction of the vineyards of Europe, and thereby caused such an immense decrease in the quantity of wine produced, it will be next to impossible to obtain a gallon of pure wine from those countries. Indeed, the importation of American cheap spirits by the wine producing countries of Europe, to be manufactured into counterfeit wines and sent back for consumption in America, has reached gigantic proportions.

We were assured by Mr. Haskins that the chief object of his firm is to produce wines that shall be pure and free from all adulteration, made from the juice of the grape only, and that for several years they have annually pressed many tons of grapes, all of which were of Canadian growth. Their

experiments in wine making have now extended over a period of some twenty years, so that they are able from the experience thus gained to make a really good wine from our Canadian grapes. The wines which were sampled on this occasion were pronounced by those who are competent judges to bear evidence of having been carefully handled and of being well matured. Until recently, grape growing and wine making by this firm has been a labor of love; but the excellence of their products has won for them such a favorable reputation that their business has already assumed considerable commercial importance.

This industry is doubtless but in its infancy. French wine makers, driven by the ravages of the phylloxera, are seeking more favorable opportunities, are turning their attention towards Canada as a probable place for the establishment of vineyards and the manufacture of wine. It is highly probable that before many years Ontario will produce pure and wholesome wines in sufficient quantity to supply the markets of our Dominion, for we possess both the soil and climate eminently suited to the cultivation of many varieties of the grape. A wonderful impulse has recently been given to the cultivation of this luscious and healthful fruit by the introduction of new and choice varieties, some of them of surpassing excellence. The work thus auspiciously begun will doubtless go on, and each year will add some new variety of excellence, until we have native sorts rivalling in every valuable requisite the best grapes of the Old World. If one of the results shall be to give to our people a pure, undrugged wine in place of the fabricated wines now on sale, the thanks of our people will be justly due to these pioneers in grape growing and wine making who have shown the possibility of making a pure and palatable native wine.

THE CULTIVATION OF FOREST TREES.

There is no more profitable use to which rough ground, that cannot be profitably plowed, can be turned than to plant it to timber. But the profit depends greatly upon the kinds of timber planted. Some timber trees are of quick growth; some grow slowly; some are valuable and some worth little; some will best succeed on dry soil, and some best on wet ground, and some require certain conditions of climate. Thus, in swampy places, white cedar, tamarac, spruce and balsam fir will thrive excellently, but the last mentioned is valueless for its timber, while the others are salable at good prices for various purposes. Again, in some localities the otherwise useless white birch is in demand for manufacturing purposes, and will there pay better than any other kind. Hard maple of the bird's eye or curly varieties will grow best on rocky ground in a cold climate, while black walnut requires a warmer climate and rich soil to thrive well. Usually the timbers required for manufacturing purposes pay the best; such as walnut, chestnut, cherry, maple, and birch, which are in demand for furniture; elm, oak, ash, hickory, basswood, and some others, are bought by wagon, carriage, and sleigh makers; cedar, chestnut and locust are valuable for fencing, and in some places an acre of swamp covered with white cedar has yielded nearly a thousand dollars for the fence posts and rails taken from it.

Cultivated timber is worth much more than that which has grown wild, as much so as a crop of cultivated potatoes is more valuable than one self-sown and neglected. The timber grows more rapidly and in better shape, and there are more trees on the same quantity of ground. Thus, one acre of cedars, planted four feet apart each way, would contain 2,722 trees. These trees, so

closely planted, would grow tall and straight, and when four to six inches in diameter might be thinned to eight feet apart, and would yield about 2,000 poles, some of which would make fence posts, and the rest hop poles, the value averaging at least twenty-five cents per tree. This would produce \$500 to the acre, leaving 680 trees to continue to grow until they become worth fifty cents to a dollar per tree for various purposes, such as fencing, vineyard stakes, &c. By cultivating the young trees the growth would be very much advanced, so that at five or six years the first thinning might be made, and a handsome income derived from the plantation, while, by ordinary natural growth, twenty years would probably elapse before any income would be realized, and then only a very small one. It is the same with other trees—at eight years old a plantation of chestnut timber has begun to pay a good profit, in addition to the whole cost, by the thinning of the trees for fence posts and rails. While the remaining timber is growing, the cut stumps sprout again, and by the time the former is ready to cut the latter are prepared to occupy the ground, and so an alternate growth may be procured without any planting. A grove of large chestnut trees, with about forty trees to the acre, has paid \$120 yearly per acre, for many years, from the fruit alone, which usually sells at \$3 a bushel, while trees so grown yield much larger crops than the wild trees; so with special kinds of timber, such as white birch, that is grown for making thread spools and toothpicks, and hickory, that is in demand for light buggy tires and bent furniture work, and other timbers required for furniture, as basswood for wooden seats for chairs and for the bent dashboards of pleasure sleighs, and birch and maple for the frames of chairs and tables. The fact is, one can scarcely go wrong if he will

only plant such timber as will thrive in the soil and situation he can devote to the culture, and this point is the most important to be considered in entering into the enterprise. The first thing to be done is to prepare the ground. This should be by plowing, if possible, or in some way by breaking up the surface. If no other way can be found, this should be done by grubbing a place for the young tree or the seed. Some kinds are not easily transplanted, and grow better when the seeds are sown where the trees are to stand. Chestnuts, walnuts and hickories succeed better when the nuts are planted in this way, and it is easy to plant the nuts and loosen the surface around them with a grub-hoe or a spade, if the ground is too strong, or too rough, or too steep for plowing. In planting nut-bearing trees, it is best to secure a supply of the nuts in the Fall, and plant them at once, if convenient, otherwise, to bury the nuts in the ground in a sheltered spot, and plant them early in the Spring. Trees of other kinds are best raised in the nursery. The seeds are sown in beds, in rows eighteen to twenty-four inches apart, and when the young plants are a year old they are taken up, the tap root cut off, and are then planted in their permanent places, in such a way as that they may be cultivated as a crop of corn should be, if the ground admits of it. Evergreens—as cedars, pines, spruces and hemlocks—require special care in the planting. The seeds should be sown in beds of fine soil upon the surface, and fine mold is then sifted upon them until they are covered not more than a quarter of an inch deep. The beds are then shaded with a screen of evergreen boughs and leaves, and need to be kept moist by frequent watering in dry weather. When a year old the plants are very small, and may be pricked out from the seed-bed

to the nursery, and planted a foot apart each way, and still shaded by a screen of boughs laid upon laths or light poles, elevated a foot or two above the surface. When of proper size the young trees may be removed to the permanent plantation, and the frequent removal will cause them to throw out a mass of fine fibrous roots which very much tends to secure their safe transplanting. For these trees close planting is advisable. This causes a straight, upright growth without lower limbs, and produces the most valuable kind of timber for use when it is small. For bean poles, hop poles, vineyard stakes, ladder poles, and many other such uses, straight, smooth spruce or cedar is worth much more than short, crooked branchy trees; indeed, it is difficult to say what use such trees as these are fit for, excepting firewood, and for this they are worth very little indeed.

There are some newly introduced timber trees which are considered very valuable. One of these is a species of catalpa (*C. Speciosa*), or the showy catalpa. This tree has a large leaf, and produces remarkably large, showy blossoms. It is hardy in the Northern States, Western Canada, Wisconsin, and Michigan. It is a rapid grower, and the timber is remarkably durable, of fine grain, and takes a handsome polish. The alanthus is another valuable timber tree which is easily grown. This timber is very durable, and is especially valuable for railroad ties, as it holds a spike with great tenacity and bears a great strain without crushing.

The popular impression is that one who plants timber will never live to reap the benefit. This is a grand mistake. Profit, benefit and advantage are not always the personal securing of pecuniary results. One owes something to his children, to his neighbours, and to his countrymen. If there were no other advantages secured than the

benefiting of these, it would be one's positive duty to plant timber wherever he could do it with advantage or success. But a comparatively old man may plant and live to reap the profits of his enterprise. Ten or twelve years will return the full outlay made with a larger interest than could be secured as safely in any other manner of investment. Five years may begin to return the beginning of the harvest, and once begun the harvest is continuous for many years. We have seen fine saw-logs cut on the western prairies, where sixteen years before not a bush broke the view of the whole horizon; and in the Eastern States we have seen pine logs cut on ground that still shewed the traces of former corn-hills when the ground was abandoned to a natural growth of timber. Canada is too new a country yet to shew many such examples, but we have seen there trees of various kinds, fit for marketable uses, which had grown up during the occupation of the present owners of the land. So that for every reason the planting of timber should be made a business by those who have conveniences for it.—*Weekly Star*.

CLIMBING PLANTS.

There is a charm about these plants that always commends itself to the lover of the beautiful, and wherever we see a lover of flowers we are sure to see climbing plants, from those gems that greet us in the morning (morning glories), to the stately cobeas, bignonias, passion vines, or climbing roses. The number of sorts that can be grown is legion, and many good things have scarcely yet got into cultivation that are worthy of it, amongst which may be mentioned the *Apios tuberosa* or ground nut. This is a little gem; in July and August it is one mass of chocolate-colored, pea-shaped flowers,

which is a very unusual color in flowers. Its leaflets are very pretty also. It grows upon the low bushes of the Northern woods, and often lends a beauty to a hazel bush, which is rarely very fine itself. The Apios has a tuber, or a number of them, to one plant, like a potato, but smaller. They are nutritious, and would be a good substitute for some of the things we eat. This can be grown in a window, and would be a fine ornament if the tubers were started late in summer so as to throw its flowering season late in the fall, but as a garden climber it would be fine planted amongst tall-growing summer roses, as it would do them no harm, but lend a beauty to them after they had done blooming. Most people make a mistake in trying to grow climbing plants. They put up the most unnatural things for them to twine or climb up, and they have to be tying, nailing, and otherwise fixing their climbers all the time, when, if they paid some attention to these plants in a state of nature, they would learn a lesson. A few straight sticks, if placed upright in the ground amongst twining plants, will lead them up to other things, so that they can twine and go higher. A barbed wire fence can be made pretty if morning glories, or even the echinocystis (wild cucumber), is sown along it, and a few sticks put so that the little plants can reach the wires above them. The best thing for making a fence of in a garden, to be ornamental, and for climbers or twiners to grow upon, is wire netting, with about four-inch meshes. This can be bought for about fifty cents a yard, and yard wide. It makes an elegant low fence if everlasting or sweet peas are sown along it; or it is improved by mixing in the taller kinds of nasturtiums or ipomea coccinea (scarlet morning glory). Everlasting or sweet peas do best when they are sown in the fall.

The *Celastrus scandens* (Rocksbery wax work), or commonly known as the bittersweet, is one of our best twiners, and to find a full-grown plant of it in its glory of fruit, in the winter, in our woods, is enough to make everybody want to grow it who sees it. Occasionally one can be seen in the woods north of Evanston, that the woodman's axe has spared. It has grown up some trees twenty feet or so, and has spread as wide. It will be loaded with its bright red berries, which is simply a sight to gratify all lovers of the beautiful, if seen when snow is on the ground. The bright, glossy leaves of the *Celastrus* are another recommendation for growing it as a choice out-door twiner. It grows abundantly on the Illinois Central railroad from Thirty-fifth street, south of Chicago, but is rarely seen in fruit until we reach Indiana. Our old stand-by, the Virginia creeper, or *Ampelopsis*, is a valuable plant to put upon walls or trellises, but it finds difficulty in getting up if it cannot find something like a piece of wire or nails to take hold of. The *Rhus Toxicodendron*, or poison ivy, is often found as a climber, and were it not for its poisonous nature it would be a good thing to plant against painted or brick walls, as it will cling like the English ivy. Its poison is more feared than is needful, for if it affects any part of a person's skin it is instantly neutralized if a little soil and spittle, or a drop of water, with a little ammonia in it, is rubbed on the parts affected. (The writer has collected fifty pounds of leaves at one time, and cut them up fine for medicine, but did not suffer, though all was done with the hands bare.) Hoping the reader will excuse him, the writer wishes to say that most vegetable poisons on the skin, the sting of bees or wasps, can be instantly rendered harmless, or the pain removed, by rubbing the parts affected with any kind of soft mud.

The tender aristocratic twiners and climbers, such as *cobea scandens*, *ecre-mocarpus*, Madeira vine, *maurandias*, *physianthus albens*, *lophospermums*, and the *solanum jasminoides*, are very fine, but ought to be in conspicuous places, as they are choice, and ought not to be subject to the rough winds that we sometimes get here. These, not being hardy, have to be kept in-doors in winter. There is one of the *ipomeas* that blooms at night, and has flowers as large as a saucer, or six inches wide. They are pure white, and very fragrant; it is called *Noctophyton*, or *Bona Nox*. The seeds of this will grow if sown in a window about May first, and be ready to plant out about June 10th, which is early enough. It grows to a great height, and is very interesting when in flower at night in the summer months.

Both our native and the Chinese *Wistaria* are splendid twining plants, and ought to be grown more than they are. They are hardy enough, but the most climbers that the writer has seen growing about residences are cheated, and the growers have "sunk the ship for a bucket of tar." They have not given their plants a fair chance; for most of these plants, in a state of nature, grow in good beds of vegetable mould, and we see them trying to grow near houses in the poorest of stuff, like trying to make a silk purse out of a sow's ear. The *Celastrus*, and many vines, will grow in the sand and gravel of the lake shore, but see the same vines growing in the rich woods and they will surprise many who are fond of climbing plants.

Our various park commissioners have an opportunity to show what can be done with twining and climbing plants, instead of going in the old ruts of putting a plant or two in vases or on trellis work. Let them devote an acre or two to these kinds of plants. The thing

could be done in an ornamental manner, without much expense, if the right spirit was put in the matter. Many of the residences of gentlemen would be made more attractive if there were a greater number of twining and climbing plants about them. It is not always the wisest plan to crowd a place with the showy things. Many interesting twiners grow in the woods not a great distance from Chicago.

Our farmers could easily have lots of interesting places about their homes, especially near wood lands. A pile of old stumps can be covered with creeping, twining, or climbing plants, and though it brings nothing back to the purse, it will often give more pleasure than money can buy to their wives, little ones, and friends.

Many kinds of climbing plants have some curious things about them. One of the *Passifloras* opens its flowers with loud noise, hence probably its name. The *menispermum*, or moon seed, has a curious shell that partially covers the seed. It looks like half of a hazel nut shell with the nut in it. The ladies of the South collect them to make rustic frames for pictures. The *Aristolochia* has a curious pipe-like appendage to the flower, hence it is called Dutchman's Pipe. The *Loasa* is covered with hairs that will sting like a bee's sting if touched by any tender part of a person's body.

Our climbing roses are known to everybody, but they, strictly speaking, could not be called climbing, for in their native state they have to work their way over other things, even their own old limbs. They are, more strictly speaking, reclining plants, and the writer would like to see some one who would have the courage to treat them as such. Any one who has seen *Rosa setigera*, or the wild Michigan rose, so-called (it grows in many parts of Illi-

nois), that our "Prairie Queen Rose" was raised from, must have been struck with its great beauty when growing in a state of nature. The writer saw one bunch of it thirty feet through, or in diameter, the past year, with thousands of flowers upon it. If the writer prevails upon some one to try and grow the Prairie Queen as it grows wild, he will feel thankful.

In concluding this paper, it is wished that some one may take pity upon our woodbines or honeysuckles. Though not all climbers, they are worthy our attention, and deeper, better soil than we usually see them in, in gardens. —A PERAMBULATING GARDENER, in *Prairie Farmer*.

LETTUCE.

Among the many vegetables which are usually found growing in any well-stocked kitchen-garden, there are none that are more highly prized than one, two, or three varieties of Lettuce. This vegetable is always in season, and always a welcome relish for those who are fond of the choicer productions of the vegetable garden. The wonder is, that a vegetable so easily grown, and one that is so highly valued, is not more generally seen in the gardens of the many, instead of the few, for this seems to be the case. In large centers of population, the demand for Lettuce extends the year through, and it is one of the leading crops raised by market gardeners, in the winter under glass, and in the spring and summer as an out-of-door crop. In former years, the bulk of the winter production of Lettuce was raised in hot-beds and cold frames, for the winter and early spring supply. But now a large part of the winter supply is grown in houses, constructed and heated in the same way that the ordinary greenhouses are; and this latter plan is a great improvement on the old-style method. In these

houses there are three crops of Lettuce raised between the first of December and the first of May. This plan enables large hotels and first-class restaurants to have Lettuce on their bill of fare at all times through the year. For family use, an early spring supply can easily be raised by planting in a hot-bed at any time that the bed is ready, setting out sixty plants under each sash of 3 x 6—the usual size—giving air in mild weather, and frequent waterings with tepid water. The market gardener always sows the seed for the following year's crop in September. In November, these young plants are "pricked" out close together in an ordinary cold frame, where they are kept until planting time, in March or April.

The plants for the crop of early cabbages are set out in rows two feet apart, and a row of lettuce is set between each two rows of cabbages. The lettuce comes to maturity and is marketed before the cabbages are half grown, and, by economizing ground, a large quantity of produce is raised from a comparatively small surface. When the lettuce plants have not been kept over through the winter, then sow a small quantity of seed in a hot-bed at the time of sowing tomatoes, egg-plants, and other seeds wanted to stock the garden. Seeds sown in this way may be planted in the open ground, in the latter part of April, and, unless checked by cold, frosty weather, will grow rapidly, giving some for table use in five weeks from the time of planting. Cold-frame plants can be set in the open ground three or four weeks earlier than hot-bed plants; and to gain this advantage in time, and lengthen the season, it is a good plan to buy two or three hundred of plants from some market gardener or seed-store. These can be planted in the garden as soon as the ground is fit to work, and as a matter

of course, will give lettuce for table use four or five weeks earlier than hot-bed plants. There is one fact that should be borne in mind, that is: to grow crisp and tender head-lettuce, the *soil must be mellow and rich*. One of the pleasant features of raising lettuce for home use is to have it come in succession, and this can only be attained by planting at different times, three or four weeks apart. The way to get early lettuce has been briefly outlined. The later crops come from sowing the seed in the open ground, in some sheltered spot, as early in the spring as it will do to work the ground. The seed-bed should be made mellow and smooth, and the seed may be sown broadcast or in shallow drills, covered very lightly by raking over the bed with a wooden rake, drawing the rake in the direction of the drills. The latter method is preferable, from the fact that, while the plants are small, the spaces between the rows may be disturbed with a hoe, and the growth of the plants hastened, as well as the weeds kept down.

There is now a long list of varieties, and, unless one has had some experience in raising lettuce, it is rather difficult to choose and not make an error in the choice. Among the very best sorts to select for family use, one that is widely and favorably known is the "Early Curled Simpson." This lettuce is a favorite with market gardeners, and is extensively grown in the vicinity of New York for that market. When planted on rich ground it grows into a large head, that on the table will be found crisp, tender and of good quality. Another and very excellent variety is the "Hanson" lettuce, which grows to a large size, forming a solid head, crisp and of fine flavor, and very popular among the consumers. "Tennis Ball," "Boston Market," "Early Butter," and other sorts, are prized on the table, when grown on ground that is in good

heart. There is neither profit nor pleasure in attempting to grow lettuce on poor, thin soil. In planting in the garden, set the lettuce one foot apart each way, and then keep the ground mellow and free from weeds—*American Garden*.

GAS TAR WATER FOR INSECTS.

BY D. M. DEWEY, ROCHESTER, N. Y.

In conversation to-day with a farmer friend, I got from him what I think every planter should know. As he is a reliable man, I give you his statement, believing you will confer a favor on many of your readers by publishing it:

Gas Tar Water Sure Death to Potato Bugs. Mr. S. R. Hart, of Brighton, N. Y., near Rochester, has for two years past used on his potato vines water which has been impregnated with gas tar. One gallon of gas tar in a tub, and fill the tub with water; stir it up well, and let the tar settle. Then sprinkle the vines with the water from a sprinkling pot. This has proven more effective than Paris green. He has also tried it on currant bushes, and finds it equally effective. It is inexpensive and perfectly reliable, and will prove equally sure death to insects of every kind on trees. This gas tar can be had at 75 cents a gallon, and one gallon would suffice for many acres of potatoes or a nursery for the season. I give you this information believing your readers will find it a great desideratum in these days of insect pests.

It has long been known that tar applied to trees destroys the worms; but until now there has been no method of applying it to shrubbery or vines. Gas tar possesses chemical properties not found in ordinary tar. Water, strongly impregnated with gas tar, is found to be sure death to insects, worms and bugs.

FAMILY SUPPLIES OF FRUIT.

The *Country Gentleman* replies to those who wish to know how they can obtain an early supply of fruits for their families, and for what portion of the year these supplies may be obtained by means of a suitable selection, as follows:—

In the Northern States, the first ripening sorts begin early in June with strawberries. Of these there will be a difference of about a month in their season, the earliest productive sorts being the old Wilson, and the newer Crescent, Duncan, and not always productive Crystal City. These are followed by the Cumberland, Seth Boyden, Sharpless, Kentucky, &c. As far north as New York City, these different sorts should give a good supply every day for the table, from the first of June until early in July, with beds well cultivated, covering three or four square rods of ground. Half a dozen or more of cherry trees will begin to furnish ripe fruit from the middle of June till the middle of July, if they can only be allowed to remain on the trees till ripe—which, between the birds and the family, is rarely done. Early Purple Guigne and Belle d'Orleans are the earliest; then Coe's Transparent, Black Tartarian and Rockport; and later the Dukes and Morellos. Early Richmond is generally reckoned an early sort, but if allowed to hang a month it is greatly improved.

Then come the currants and gooseberries, the raspberries, and blackberries; but before these are all ripe the early pears and apples are on hand, and, where they will succeed, those delicious early fruits, the apricots. The first peaches and plums are not much behind, and the first grapes ripen before the end of summer.

Plenty of delicious fruits run through the entire autumn. We have peaches and plums till frost; and apples, pears

and grapes throughout. There are so many sorts, and of such ranging quality and character that every person may be suited. Grapes and pears may be kept through winter, and apples into June. No one who has an acre or two of land to plant need be without a plentiful supply for a single day in the year. He will need, however, to observe three requisites—first, to make a good selection of sorts for his particular locality, much of which may be learned from his successful or experienced neighbours, if he has any; secondly, to give his garden and orchard the right cultivation; and thirdly, and very important, to have a good, cool fruit room to keep his winter sorts and long keepers in. Carelessly thrown into a common cellar, apples may all rot by the first of April; in a carefully attended fruit room (without ice) we have kept such common sorts as the Baldwin fresh into July.

It will be borne in mind that while it is necessary for profitable marketing on an extensive scale, to select the most favorable localities for soil, aspect and other influences which shall give uniformly good crops, a good home-garden may be had almost anywhere, which will give satisfactory returns, with a proper selection of kinds adapted to it, and with good cultivation. It is always safest to choose dry upland, and to avoid low or mucky soil. If necessary, it must be well underdrained, and before planting, especially for small fruits, it should be made mellow by previous cultivation, in order that the young plants may be easily set and kept clean. Some enriching by manure is nearly always essential, but at least a part or the main portion may be applied afterwards by successive autumnal top-dressings. For standard fruit trees, this top-dressing is better than trying to make the ground very rich on the start, a clean and mellow surface being the great requisite for young or newly set trees.

In order to facilitate frequent cultivation after the plants and trees are set out, everything should be placed in rows so as to admit the passage of a horse in doing the work. There is nothing more essential to success with small fruits, and with large fruits, while the trees are young, than constant clean mellow cultivation. If the work is to be all done by hand labor, it will be sure to be neglected, and a hard crusted and weedy surface will result in nearly total failure. If annual manuring is given in autumn, crops of vegetables may be taken from among the larger trees.

The inquiry will naturally be suggested by occupants of new places: "How many years must I wait before I can have plenty of fruit?" Under the usual management you may have a good supply of strawberries next year from plants set out this spring, and raspberries will begin to bear next year, and more freely a year later. Currants and gooseberries will require about the same length of time, and grapes will come into moderate bearing nearly as soon. Dwarf pears will begin to furnish a fair supply the third year, if you select early bearers. Even standards of some sorts will be nearly as soon in coming into bearing—such, for instance, as the Bartlett, Washington, Summer Doyenné, &c. Much will depend on the treatment they receive.

SEEDING ORCHARDS.

As to the treatment of Apple orchards, we know that when they are established on light gravelly or sandy soils they require periodical applications of manure, that the ground should also be kept loose by shallow plowing, and afterward to be surface-stirred with the harrow or cultivator—all of which is requisite to maintain a proper degree of fertility.

We have learned that to sow grass on the surface of the orchard planted in such soils is simply the first step toward the destruction of the trees, so far as regards their fruit-bearing capacities. Of course, we are now considering ordinary condition and management, for it is quite practical, merely considering it as a question of possibility, to so enrich the surface of even the lightest of soils as to obviate necessity of further surface culture.

On the other hand, we may imagine the case of an orchard placed in a condition of things very much the reverse of the one we have considered. In this the soil is a strong, rich loam, perhaps with a preponderance of clay in its composition, and the trees are growing vigorously, and for some years have been making a great quantity of wood and but very little fruit.

When a case of this kind occurs, we know that in order to produce fruitfulness we must, by some means, weaken the growth, and the most available means is to cover the orchards with grass. This will have a tendency to check the growth of the shoots, and as a consequence favor the production of fruit. This is in accordance with the general law that "whatever tends to weaken a plant favors the production of flowers and fruit, and whatever tends to the luxuriant growth of leaves and branches is unfavorable to the production of fruit."

Therefore it is that the question as to whether orchards should be kept in grass or cultivated like a corn-field cannot be answered with regard to orchards in general; but when the question is applied to any particular orchard it admits of a definite answer, the condition of the trees (and soil) indicating what the answer will be.—
WILLIAM SAUNDERS, *before the Potomac Fruit-Growers.*

ADVENTURES OF AN ACORN.*

The following lines were written by a Scotch horticulturist, to illustrate how curiously seeds are sometimes scattered over the earth. The story in this case is literally true, and what makes the circumstance the more interesting to Scotch botanists, is the fact that the oak thus strangely introduced into that country is of a kind different from any hitherto growing there:

In the far off wilds of Canadian woods,
Where the red man lives and dies—
Where the wild turkey hatches and rears her broods
Unseen to the white man's eyes—
There fell to the shot of a gun one day,
To the sportsman a glorious prize,
A turkey, whose flight lay over his way,
A bird of a royal size.

This turkey was sent to old Scotia's shore,
As a Christmas treat to a brother,
And never on Christmas board before,
Had the Scotsman seen such another.
And deep in the "crop" of the bird he found
(Now here is the pith of the story)
A seed of a tree whose name is a sound
Of renown in old England's glory.

The acorn was planted in mother earth,
And soon to new life awoke,
And fresh from the ground there issued forth
A sapling of royal oak.
Now wise men all, I pray you please,
To mark the curious ways
By which the seeds of plants and trees
Are scattered in our days.

*These lines, by "Patriarch Peter" penned,
My less romantic tale amend. W. M.

DISCOVERY OF EXTENSIVE PINE FORESTS.—The recent exploration party of Colonel Mercer up the Spanish River, in the province of Ontario, is said to have discovered vast pine forests, containing upward of 24,000,000,000 feet of a superior quality of pine lumber, with facilities for getting it to market equal to the best.

KEEPING APPLES.—G. F. Newton, in a paper read before the Ohio Horticultural Society, describes an experiment in keeping apples, by which he had Tompkins King with fresh flavor and bright color in April, and Rambo and Peck's Pleasant in July. The secret of success was a constant low temperature. They were gathered in September, heaped on the barn floor till cold weather, carefully assorted, barreled, and kept in a cold cellar. The uniformly low temperature was preserved by opening the ventilators of the fruit-room in cold, and closing them in warmer weather.—*Country Gentleman.*

SHORTENING-IN THE PEACH.—Those who have made an actual trial with shortening in the shoots of the peach, do not find it to require the amount of labor which the inexperienced suppose necessary. A. C. Younglove, of Vine Valley, N. Y., shortens back his orchard of 600 trees, performing the work expeditiously, and he finds it profitable, greatly improving the fruit. In answer to the frequent inquiry as to the best time for performing the work, late summer and early spring may be given. If done late in autumn the trees are made tenderer for withstanding the cold winter. If done before the leaves drop and while there is still some growth, the wood ripens well and is prepared for the cold.—*Country Gentleman.*

PRESERVING AND MARKETING—OVER PRODUCTION.—If any one will take the trouble to look into the facts about the comparative price of the different kinds of fruit grown in this country they will see how foolish is the idea that the country is in danger of being overstocked. The price of apples, peaches, pears, strawberries, grapes, etc., for forty years, dividing that time into four periods of ten years each, and statistics show that on an average the price of fruit has constantly increased. In strawberries and other small fruits this has been very marked. Production has grown rapidly in that time, but prices have constantly advanced. Occasionally we have a year of great abundance of apples, and prices are low. But farmers generally do not seem to have realized yet that the surplus in apples may be very profitably utilized in fattening both hogs and cattle. The best of meat may be made with a little corn and plenty of apple food. In older countries it is well known that this kind of feed cooked and mixed with ground grain is very healthful for all kinds of stock, and it is doubted that hogs would have the disease known as cholera if fed this kind of ration frequently. So we see that in years of abundance the surplus fruit, when the price is low, may be profitably fed to stock, and thus we may realize a good price for it. There is no danger of planting too many orchards, or of getting too much fruit.—*Indiana Farmer.*

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THE CINERARIA.

The beautiful group of flowers with which this number is adorned will give to our readers a very good representation of the form and coloring of these very showy ornaments of the greenhouse. There is nothing more gay than a fine collection of Cinerarias, whether massed together so as to display their striking contrasts of color, or distributed among other plants to give an air of cheerfulness to the whole. A well grown plant when in bloom makes a most elegant subject for dinner-table decoration, while its hawthorn-like fragrance fills the room with most agreeable perfume.

These lovely flowers can be had in bloom from early in February to the middle of April, though usually they are in the fulness of their glory during the month of March. They are easily propagated from seed, which should be sown in light sandy soil, in pots or boxes. The soil can be best prepared by using one half good loam, and the other half a mixture of leaf mould and sand in equal parts, the whole having been run through a fine sieve. Fill the pot or box with the soil, having first provided for drainage, and moisten

it with water from a very fine rose. Then sow the seed upon the surface, sift over it the slightest covering of soil, and press it firmly with the bottom of a pot so that the seeds may be in close contact with the earth. Cover the pot with a pane of glass and set it in the shade, that is, where the direct rays of the sun will not fall upon it. We usually sow the seed the last of June or first of July.

As soon as the plants are well up, the pane of glass should be removed and the plants exposed fully to the light, but not to the direct rays of the sun. When the first rough leaves appear, the little plants should be carefully pricked out into thumb pots filled with soil such as has been already described. They can remain in these little pots until the roots have filled them, when they should be shifted into three-inch pots. If more convenient to use boxes than thumb pots, they may be pricked out into boxes, setting them about an inch apart, and allow them to remain until they grow so as to touch each other.

When they are shifted into the three-inch pots, the soil should be made richer

than that described, by lessening the quantity of sand, using only half as much, and supplying the deficiency with well rotted sods. When these pots are filled with roots, the plants should be again shifted, and as they increase in size and fill the pots with roots, they should be shifted into larger pots until you have them in as large pots as you desire: a six-inch pot will be large enough. At each shift make the soil richer and rougher, using more manure that has been most thoroughly rotted and turfy loam. When the plants become established in the largest pots it is intended they shall occupy, they should be freely watered with manure water, applying it until the flowers begin to open, then withhold it entirely and use only soft water. These plants require an abundant supply of water during their entire season of growth, and to be kept in a cool place, where they can have plenty of air and light, but very little sun. The best place is on the north side of some building, sheltered from drying winds, but not under the shade of trees. In watering, sprinkle with a fine water-pot rose in the morning and evening, and shelter them from heavy rains.

When it becomes necessary to take them in on account of danger from frost, put them where they will have plenty of light and air, and only the morning and evening sun, keeping the temperature as low as possible, so long as it does not fall below thirty-five degrees; and never let it rise above fifty. It will now be especially necessary to be on the watch for green fly, to which

they are very subject. In the greenhouse they can be fumigated with cold tobacco-smoke, which should be done frequently, so as to prevent the green fly from getting a lodgment. It is important to have the smoke cold, for hot smoke is injurious to the plants.

It is not easy to grow *Cinerarias* as window plants unless the window be enclosed with glass doors from the heat and dryness of the room. In such an enclosed window the temperature and moisture can be regulated to suit their requirements. But it may not be convenient to fumigate with tobacco, in which case it will be necessary to dip the plants in water in which tobacco has been steeped until the liquid is of a light brown color. This can be done by placing the hand over the earth while the plant is inverted and plunged into the liquid; do not wet the soil with the tobacco water, but let the plant drip thoroughly before placing it again in an upright position.

When they have done blooming, the plants may be thrown out on the rubbish heap, unless there be some so very beautiful that you are anxious to preserve them. In that case cut the plant back to within a few inches of the pot, place it in some cool, shady place, see that it does not suffer from lack of water, and when it has sprouted again, usually in the month of August, take it out of the pot, pull off the rooted sprouts, and pot each singly in a small pot, and treat them in the same way as if they were seedlings.

We trust that these directions for growing *Cinerarias* will be easily un-

derstood, and that many of the readers of the *Canadian Horticulturist* will have the pleasure of growing plants having heads of bloom two feet across, and the individual flowers measuring two inches and over in diameter. The magnificent display will well reward their care.

QUESTION DRAWER.

For how many years are young fruit trees improved by being transplanted, and how often?

Also, why are nectarines so difficult to raise? We never see any here.

W. W. R.

The improvement of young trees by transplanting consists in causing them thereby to throw out a large number of roots within a given space, so that when they attain to the size required for orchard planting they may be so well furnished with small fibrous feeding roots that they will not feel the removal from the nursery row to the orchard. An apple tree is taken from the seed bed when it is two years old, the tap root cut off, then grafted, and planted in the nursery row. When it has grown two years in the nursery row, it would greatly increase the number of small roots near the trunk if it were again taken up, the large roots shortened, and planted once more in nursery row and allowed to remain two years longer before being planted in the orchard. There is nothing to be gained by again transplanting the tree. Evergreen trees are benefited by being transplanted a greater number of times, because their comparative slower growth gives better opportunity, and their leaves being not deciduous there is the greater necessity.

There is no greater difficulty in growing nectarines than plums, save that

the tree is no more hardy than a peach tree, hence requires a mild climate.

MULBERRIES.

Will you be kind enough to give me all the information you can about the mulberry tree, as to its hardiness (1), productiveness (2), and quality of fruit (3)?

JESSE WELDON.

Oakwood.

1. The Black or English Mulberry is not perfectly hardy in all parts of Ontario. It will do best where the Peach is successfully cultivated. The new American Mulberry promises to be much more hardy. The Russian Mulberry should be hardy as far north as Sault Ste. Marie.

2. All varieties are exceedingly productive.

3. There is some difference in the flavor of the different sorts; but the three sorts named above are highly esteemed for fine quality.

SAUNDERS' RASPBERRY.

I beg to report my success with the Saunders Raspberry, received in the spring of 1880. It threw out four or five long, spindling shoots, four or five feet long, that I laid in a circle around the plant. One or two took root from the tip. However, I let them lay, and last spring it leafed out and blossomed finely and fruit set. I protected them from birds as much as possible. Fruit large and ripe. First picking, one quart of fine berries; picked twice more, in all about two quarts. I think very highly of the berry on account of its fine size and immense crop. I am propagating all I can, and intend to plant freely, as I think it will be one of our best paying berries. Soil, high dry sand.

C. H. BIGGAR.

Drummondville.

"BUHACH" ON CABBAGES.

A REMEDY FOR THE CABBAGE BUTTERFLY.

Last summer I recommended a friend of mine who grows cabbages on a large scale, and who has been a great loser by the cabbage worm, to try the Californian insect powder, "Buhach." I obtained some for him from Mr. Miles, of Stockton, Cal., and, thinking a few notes of the results may be useful and interesting to your readers, I send them to you.

My friend was growing about 3,000 head of cabbages, so that their protection was an object of considerable importance to him. In the beginning of September the plants were much injured, some of them nearly destroyed. The first application of the powder was then made in the form of a mixture of ten parts of flour to one of the Buhach. This was found to be rather too weak. Its effects were evident on those worms which were touched at the moment of application, but many of those not actually so touched were not injured. The experiment was made on 800 plants, and the time required was two hours.

A second application was made on September 7th to 1,000 plants in two hours. This time a mixture of one part of Buhach to eight parts of flour was employed, and the effect was much more lasting and complete.

On September 21st a third application was made to 1,000 plants, also requiring two hours. This time a mixture of one part of Buhach to eight parts of lime was employed. This was found the most successful compound of all. The lime formed a better dust-spray than the flour, and adhered to the plants equally well. The plants all formed new heads, and an excellent crop was the result.

It was, of course, not necessary to do more than to poison the outer rows

of the patch. In so large a number the inner portion is not visited by the butterfly, which rests upon the plants which it first meets.

The three applications mentioned above were consequently made upon the outer rows entirely, some of the plants receiving two and some three dustings.

My friend informs me that he considers himself a gainer by the presence of the worm this year, as its ravages threw the heading of the cabbages later in the season, and they were not fully matured until the cold weather set in. He was therefore at no trouble or expense in preserving them through the last few warm weeks of autumn.

E. W. CLAYPOLE.

Yellow Springs, Ohio.

P.S.—I sent you some time ago a few notes on my treatment of the potato beetle last summer with London purple, which appeared in your number for September. In order to make that account complete, I will add that as a consequence of preserving the tops from injury, I had the pleasure of digging from an acre of ground more than eighty bushels of good, large potatoes, worth at the time \$1 25 or \$1 30 a bushel. This was in spite of the intense drought, which destroyed almost all the potatoes in this district. Many of my neighbors, acting towards the beetle on the principle of "live and let live," did not get more than ten, or in some cases five bushels of small potatoes from the same quantity of land. Not a few failed to obtain even their seed.

I may add to the experience of my friend given above, that in my own garden I find the poison dust of London purple much more effective and much easier of application to cabbages in the early stages; but, in spite of many assertions to the contrary that

have appeared in print, I hold to the opinion that its use after the cabbages have begun to head would be very hazardous.

STRAWBERRIES—WHAT TO PLANT AND HOW TO GO ABOUT IT.

BY T. C. ROBINSON, OWEN SOUND.

Winter is the time to plan, especially for the fruit garden. Many persons buy a few quarts of inferior berries, and do without a great many they would like to have, for want of planning at the right time; and the planning is put off because a knowledge of the best varieties and the easiness and cheapness of raising them is not realized.

Any man who can look back on the strawberry bed in the home garden, when he was a boy, and the pleasant memories that cluster around it, will need little urging to add this attraction to his children's love of home, even with the memory of the trouble of hoeing and weeding in his mind. But if it can be shown that hoeing and weeding can be reduced to a tithe of what they were under the old system of cultivation, surely no man who has suitable land, and cares for his family, will be without strawberries—"the best fruit God ever made!"

And suitable soils are of great variety. Any land that will raise wheat, or potatoes, or corn—especially the last—will raise strawberries.

Planting can be laid out best while looking at the land. Let us take an imaginary trip, reader, into your garden, and if it is as bare of snow as mine is just now we may talk to the best purpose.

Your garden is from a quarter of an acre to an acre in size, I suppose, and you want enough berries for a family

of four to eight persons, twice a day, for as long a season as possible, with a sufficient surplus to entertain occasional company, and to preserve or can for winter. And if you can have that without its narrowing much that precious cabbage and potato patch, or costing much for the plants, or taking too much time and trouble for hoeing, or much bother at any other time, "well, you wouldn't mind," etc. I see! All right—very sorry I can't promise you the berries without any trouble at all, except planting and picking, but I'll show you what can be done.

Any part of your garden will do that is level or not too steep, and not shaded by trees; but if it is the same to you let us take that patch in the north-west corner, because the snow drifting over the fence will protect the plants in winter. Is your house or orchard in that corner? All the better then, perhaps. By planting immediately south or east of the trees the snow will fall deeply and evenly with still more certainty. Now let us have rows at least fifty or sixty feet long, because it will take less trouble in moving and setting your line to plant by, and if at any time you bring a team on with manure, or take a notion to cultivate with a horse hoe, you have less turning and less chance of injuring the plants at the end of the row. We will set fifty plants in a row about a foot or fourteen inches apart, and the rows two feet apart, because a strawberry plant needs about two square feet of land to do well on, and at that distance a horse cultivator can work with facility, if desired.

Now as to varieties. Do you expect me to advise you to stick in 500 or 1,000 Sharpless, or Bidwell, or Golden Defiance, or other sorts that you only know of from the headings of flaming advertisements in nurserymen's cata-

logues or advertisements. No! You know you wanted something reliable and not too dear; and these novelties are, many of them, untested and high-priced—except Sharpless, which is finding its level. Just take something first that you can depend upon. On your clay loam, Wilson's Albany will do its best, and probably some of your neighbors have it in abundance, and will readily let you have it for "Thank you." Just put out two rows of it, however, because its season, though quite early, is short, and one hundred plants will give you plenty for cooking, considering that you are likely to leave most of them for that purpose if you can get a sweeter berry to eat fresh. Put your Wilson's on the levellest strip in the patch, if there is any difference, and the heaviest land, and if you have any spare well-rotted manure that you don't know what else to do with give it to them; for the Wilson plant is not nearly so vigorous as some others, and in a dry season sometimes shrivels up—leaf and berry—if the land is poor and too sandy, or too stiff. "But this patch is fit to raise fair potatoes and cabbage," you say? It's all right then. Wilson will smile sweetly and give you a crop of fruit, *or of runners*—if not pinched—that will surprise you. But you would like something a little earlier than Wilson? Well, as your soil is rather heavy, you may try a row of Duncan. Not being a new sort it is pretty cheap, and it will come in nearly a week before Wilson, and give you a fine crop of large, sweet, rather soft, berries that will be about done when the main crop of Wilsons comes on. You must not expect as large a crop from the Duncan's; but the peculiar high flavor of the berries will leave little or no demand for Wilson's while they last; and they are really good yielders.

Now try one row of Prouty. It is

the handsomest berry I ever saw. Long, you know, something like a Kittatinny blackberry in outline, almost as uniform as if cast in a mould, with a smooth, shining surface, and a beautiful tint of scarlet, merging into pink on the shady side. Its quality is fine, and it sometimes out yields Wilson, size and season medium. But if your land is sandy, or poor, you must not think of trying it. It is such a great bearer—such a *determined* bearer—that on anything but rich loamy soil it runs all to fruit, and is apt to die as soon as the crop is gathered, or before.

Well, you must have some Sharpless, of course. It is so large and handsome, so late, and so good to take—put out a couple of rows and astonish the natives with berries as large as plums. But you will astonish no one but yourself unless you keep the runners off and the weeds down. Allowing it to mat up with runners and young plants will give you a miserable return of insipid, soft, pink-and-white medium berries that will not half pay for the labor of planting. Sharpless can get along without rich soil if you give it room enough; but its constitution—the reverse of Prouty—insists on plenty of sap in the leaves and stalks, and the fruit is fed afterwards. If the roots have room and the runners are checked, the immense vigor of the plant pumps the sap into the fruit, and you get fine berries and lots of them.

And lastly, we will finish the patch with one row of Glendale. It's not as large as Sharpless, or so good in quality or color. In fact it is very dark when fit to eat, and if you taste a berry that is "not ripe but only red," you will wish you had a Wilson instead. But the plant is of a wiry vigorous habit that can stand abuse. The blossoms seem better able to stand a frost when in bud than Sharpless, and it yields later pickings.

It is well, too, to have one row in hand for preserving in case a frost in early blossoming time cuts short the Wilson's, which are very susceptible to frost. Besides, when thoroughly ripe, many people seem to relish the peculiar flavor of Glendale.

But some man with sandy land would like to raise strawberries! Then, sir, keep your Wilson's for fertilizing, because most of the common sorts suitable for sandy land differ from those already named in being deficient in pollen to fertilize the blossoms. Then instead of Duncan and Prouty set two rows of Crescent which will yield an immense crop from very early till after the Wilson's, and be of better flavor than if grown on clay loam, and substitute one row of Champion (or what is either the same thing or something better, Windsor Chief,) instead of one of your rows of Sharpless. Retain the row of Glendale, and your patch is again filled up. These two kinds, Crescent and Windsor Chief, are not so sweet and rich as the kinds recommended for clay loam, but they make up for it in size of the crop, and both are very handsome. Windsor Chief is the largest, and like Glendale and Wilson, is not ripe enough for eating till quite dark in color.

Now you have seven rows containing altogether three hundred and fifty plants, that take up a space of ground fifty or sixty feet long, and say sixteen feet wide, allowing for paths at the outside, or a little less than four square rods in extent, and costing you from three to four dollars for the plants laid on the ground, if you buy all of them; or not more than \$2.50 if you get the Wilsons for nothing? Is not that within your limits of space and means?

But you want to know what returns to expect. Well, my friend, that depends mostly on how you treat the

plants. If you leave them to run races with grass and weeds after a hoeing or two, all except Wilson and Glendale, (or these with the addition of Crescent and Windsor Chief, on sandy land), will go to the dogs, and you will probably get some thirty to eighty quarts of little sour berries—to grumble over and declare strawberry growing doesn't pay. If you give about three hoeings and runner cuttings each year, on good, fair garden soil, you ought to get one hundred to one hundred and fifty quarts of fine fruit, while with first-class treatment and very rich soil you need not be surprised at over three hundred.

Any man who thinks this won't pay him on four rods of ground, has a call from fate to eat pork and potatoes, and had better be satisfied with a diet of that description!

But perhaps your means and tastes incline you to try some of the new varieties that come out every season with bounce and hurrah enough to cast in the shade the modest tested sorts we already have. Well, you will find it very interesting—indeed fascinating—to test *some of them*. But nibble cautiously at that sort of bait, my friend! I have been bitten over and over again in this line, by poor performances allied to grand promises—which, for a poor man, is unpleasant. Let me give you a good rule. Don't buy an article that only one nurseryman, or even two or three without much reputation, may recommend—no matter how highly they may praise it. But if several men whose good name is worth something to them, *e. g.*, Downing, Roe, Ellwanger and Barry in the States, and our own Dempsey, Beadle, Arnold, &c., speak in favor of a new variety, it is safe to try it. Buy a few plants, and if good, you can easily increase your stock. Of all the new varieties now before the public, Kirk-

wood, Jersey Queen, Gipsy, Orient, Satin Gloss, Primo, Longfellow, Warren, Shirts, Brilliant, &c., &c., how many will survive the third season from now? Without a doubt most of them will disappear, to be replaced by others of as high sounding pretensions. There are two new sorts now claiming attention that seem to be above all others in the uniform praise bestowed by men who have seen and tried them. They are Bidwell and Manchester—the former early, the latter late. Bidwell has been out longer, and its record is exceedingly good. After these Jersey Queen and Primo are of considerable promise. I expect to test Bidwell thoroughly next season, and Manchester slightly, and I have considerable hopes of both. One thing is certain, there is wide room for improvement yet in the strawberry. That some of the new sorts will fill the bill better than the old ones, all must hope who believe in the improvement of fruits, but which will be the variety to do so, is a question that needs considerable testing yet to determine.

SAUNDERS' HYBRID RASPBERRIES.

My Saunders hybrid is a great success. It stands the winter without protection, and is a heavy bearer of fine flavored berries, and is a strong grower. I noticed some complaint of it being difficult to propagate; mine must be different from the rest, as it threw up shoots for three or four feet around the old plant; I got eight good strong plants from it. The Burnet grape has not turned out well with me. It had only a few very straggling bunches on it, with a large proportion of the berries the size of peas. However, it made a great growth of wood last summer and may do better this year.

R. B. WHYTE.

Ottawa.

SHAFFER'S COLOSSAL RASPBERRY.

From all accounts this must be a most remarkable raspberry. It is said to have originated in the State of New York in the year 1869, and that the original plant, now over twelve years old, is yet growing with wonderful vigor, and yields extraordinary crops of fruit. Plants raised from it, without receiving any special care or high manuring, have grown to the height of ten feet, with corresponding breadth. And what is particularly surprising in a plant of such immense and rapid growth, it is claimed for it that it is a perfect iron-clad, surviving the most severe winters, unprotected, without the least injury. Its season of ripening is the same as the Gregg, yet continuing somewhat longer. Some who have grown it say they have no hesitation in claiming for it as it appears on their ground that it is the *largest raspberry in the world* on the average, as gathered by the bushel from the field. It is also very productive. The color is a rich, reddish purple. It belongs to the black-cap family, being propagated from the tips.

Of course it remains to be ascertained by actual trial whether this new variety will prove to be hardy under the severity of our Canadian winters, and whether, with all its wonderful size and productiveness, it will prove to be a profitable market berry.

A HARDY RASPBERRY. — The severe winters of the West afford a strong test of the hardiness of raspberries. D. B. Wier, of Illinois, says he has found from experience that the old Seneca black-cap is the hardiest of all the black raspberries, and able to withstand the most intense cold. The handsome, glossy appearance of its fruit, and its excellent flavor, in addition to its hardiness, should give it more attention than it has received of late years.—*Country Gentleman*.



SHAFFER'S COLOSSAL RASPBERRY.

REPORT OF SEEDLING AND NEW FRUITS FOR 1881.

In some of the departments of fruit culture this season, the supply has been most abundant and plentiful, more so, I believe, in this section than in some of the other sections of our province. As I have previously reported, for this section the small-fruit crop of this season was most encouraging and abundant. And now again, I am most happy to be able to report a magnificent crop of fine apples and luscious grapes. These crops, I believe, were quite exclusive and sectional as far as our province is concerned, being much larger and finer than in many other sections. For these expressions of benevolent favor, we should be more and more thankful than ever to the Great Fountain of good, "who supplies the need of every living thing." Without further preliminaries then, I shall at once take notice of the staple fruits as they occur in their order of importance, commencing with

APPLES.

In these the old standard sorts as Rhode Island Greenings, Baldwins, Northern Spys, and Russets, are as popular as ever and lose nothing of their real value and importance as domestic and marketable fruits. As I have previously intimated, our crop of this fine popular, standard fruit for this season was not only abundant, but handsomely developed, and much to the pecuniary profit of our growers. The demand for our apples this year was better than ever before, and our growers sold the whole of autumn and winter fruit to dealers who came to the orchard and supplied the packing for the whole. The price paid was from 80 cents to \$1.00 per barrel for autumn, and \$1.00 to \$1.50 for winter, and it was astonishing to see the quantities shipped at our ports. The consequence is our people are very much

encouraged in their efforts at apple growing, and are already planning for the extensive planting of new and much improved orchards, as they now see in the light of a keen market where they have previously erred, and are determined to rectify these matters. We have no indigenous apples of any importance whatever, as our natural specimens are too small and repulsive in flavor and texture in the light of better sorts. We have, however, seen some new sorts lately introduced that are likely to be of great value in our future stock of winter apples, and three of the best of those are Mann Apple, Grimes Golden, and Smith's Cider. The first is large, fine, and a good keeper, and the second and third are beautiful in color and relishable in texture and flavour; they are doubtless great acquisitions to our present enviable stock. We had early Harvest this year and in good condition Aug. 6th. and the beautiful new Russian apple Tetofsky, Aug. 8th. We are now growing a few western varieties that may ultimately be of great service to us, and valuable additions to our stock. These are Walbridge, Haas, Perry Russet, Utter's Red and Wealthy, mostly from Minnesota, and they are making splendid progress. In a few more years therefore, we hope to have something more splendid in the apple line to report.

PEARS.

This season was unfortunately an off year in our pear orchards, if the few scattering trees generally planted in this county, can properly be so designated. For growing this fruit we have a country well adapted both in soil and climate, and yet there are lamentably few and poor specimens grown, that is, compared with our capabilities. Why this is so is something like a mystery, but must be accounted for on the principle of reckless indifference. For

those produced the demand is good, and the price rules high, good samples readily bringing from \$2.00 to \$3.00 per bushel, according to quality. We are mostly satisfied with the old standard varieties as Bartlett, Flemish Beauty and Bon de Jersey, as we can hear of nothing better. And it may be sometime before anything better is produced. Clapp's Favorite, so largely disseminated by our society some few years ago, is now beginning to come into fruitfulness, and thus upsetting the popular objection against pear planting, that you must wait a lifetime before they come into bearing, this fallacy is now being timely exploded. Well, the fruit of this pear is fine, large, handsome and good, but very soft at maturity. The destructive blight of the pear tree so bad in some sections, is scarcely known here, even in those orchards that have been some time planted. We think suitable soil and careful preparation and drainage, with good culture, will largely overcome this difficulty in the culture of this a fine popular fruit.

PLUMS.

As far as soil and climate are concerned, this whole region is well adapted to the culture of fine plums; but it is very rarely that such is ever seen of late years. "What is the matter?" you ask. Oh, the same old disheartening story, "The Curculio takes them all;" and really this is the fact, scarcely a sample being left to show us what they would be like. Years ago we used to find a large, handsome and relishable plum on our rich creek bottoms in the woods, but like many other good things of olden time they have fled with the Indians, and now their place knows them no more for ever. What native varieties are left are few and far between and are small and astringent. This season a large nursery firm, Parsons & Co., New York, sent to us for a large quantity of native plums, to be

used solely for their seed, supposing we had any quantity here; but we had to report in answer, "No plums to be had." The sorts we attempt mostly are Blue Orleans and another blue plum, but much smaller, and in some favored sections Lombard, but in the main plum growing is at a discount among us. I may say in passing, that Black Knot is also very commonly seen on old fruitless plum trees in our fence corners and other places.

CHERRIES.

I am very sorry to report that we are not by any means so successful in growing cherries as we are in growing some other fruits. As a matter of consequence a country that is famed for fine apples, pears and plums, cannot be equally noted for fine and beautiful cherries. The fruits in their very nature require different conditions of soil and climate. In our forests are some of the finest samples of cherry trees that eyes ever looked upon, and yet their fruit is not the beautiful, luscious, European cherry, but a small jet black fruit, strung on their stems like a cluster of red currants. We have frequently tried to plant the trees of those beautiful foreign sorts, we used to have in such plentiful abundance when we were at home, but in most cases we have sadly failed. Last winter made sad havoc among our fine trees, 15 or 20 feet high, and 6 or 8 years' growth, that we were fondly placing our expectations upon. Now they are lifeless spectres, that we can only uproot as so many cumberers of the ground. This experience is not uncommon, and is very discouraging indeed to us of so sensitive nature. The sorts mostly attempted are Black Eagle, Black Tartarian, for this color, and for red, May Duke, and early Richmond. The late Richmond or common sour cherry, as it is called, is largely grown and easily propagated, and gives on the

whole good satisfaction, as it grows readily in almost any sort of soil, and bears neglect and hardship very patiently. A good hardy, serviceable cherry is much needed for our common, every day wants.

QUINCES

Are not to any appreciable extent grown among us, as our people do not feel the need of them, not knowing anything either of their nature or qualities. It is, however, very doubtful whether our county, in climate especially, would in any degree suit them for development.

PEACHES.

The growing of this fruit in this section is getting to be quite an important industry, and thousands of trees are annually being planted for their fruit. The reason of this is the very general satisfaction the crop has given the cultivators for the last few seasons past in its quantity and in its quality. Our soil and climate seem not unadapted to the successful production of very fine peaches. This last season, however, was an unusual exception to our generally large and fine show of peaches. The reason of this was undoubtedly the unusual severity of the preceding winter, the high winds and the severe freezing having killed the peach fruit buds, and in some localities even the wood was positively frozen to death. This may not likely occur again for sometime, but it should be a valuable lesson to our peach growers generally, to be careful to provide screens or wind breaks, to their fruit plantations, for in every case the crop is benefited by it. Our crop therefore from about 150 trees did not amount to more than 20 bushels, which sold readily for a very high price in the market. I need not say that the peach is not indigenous in our country, but we have any quantity of seedlings produced annually, some good and some good for nothing. Mr.

Geo. Ott, of Arkona, has a very fine yellow-fleshed seedling, called Ott's beauty, that is really very valuable, as it is of very fine flavor, good size, ships well, and comes true from its own seed, needing not to be budded. These, you know, are good points and our people know how to prize them, and peaches will likely be planted largely, Mr. Ott himself having the finest orchard of about 2,000 trees that I have ever seen. The sorts mostly grown here are Early York; Stump the World; Crawford's Early, and some of the very early varieties lately introduced; but Crawford's is the best, and the largest planted. There was quite a stir made by the tree agents about Early Canada, and some of them effected large sales at good prices for the trees, but the fruit is not coming up to the expectations raised by the itinerants. It is true, it is early, maturing with us Aug. 5th. but it is nothing better than Amsden's June, being small and so intensely cling that it can scarcely be used. Mr. River's Early Louise is good, very early, and very fine, an acceptable fruit. It should be largely planted as it is as hardy as our seedlings.

GRAPES

Are a very popular fruit, and fast becoming increasingly interesting. Our country seems well adapted to their successful culture, and the probabilities are that many large vineyards will be planted all over where favorable localities can be secured. The crop last season was immense, and all found a ready market at the time of maturity. Our people however, are very slow in planting out the vines, as they are much afraid there is some secret in their management, and they could not possibly do it, but still many are experimenting in small quantities. Black sorts are most popular, as our people are somewhat careless or suspicious of red or white varieties. The sorts most

grown are old, well tried kinds, as Isabella, Clinton, and Concord, which is by far the best of them all. On our creek and river bottoms there is a small, black frost grape that grows very luxuriantly over the trees, but the fruit is valueless for anything excepting for wine purposes. For a fancy grape among us the Delaware is the most popular, and the people treat it with becoming respect. It succeeds remarkably well. The new sorts that are being introduced are Pocklington, Brighton and Burnet, so named after our honoured President. Of these Brighton is likely to become a popular and general favorite, and its introduction last season by the F. G. A. will largely hasten this result, as the stock was before held as scarce and dear. Burnet, introduced by the F. G. A. two years before, is also likely to become a great acquisition, as it is a remarkably fine grower, and what fruit we have yet seen is very good indeed. Of the whites we had this season a remarkably fine crop of Marthas. This is really a very fine vineyard variety, and for our climate perhaps as good, all things considered, as we need wish. The vine is very hardy and a good grower, the bunch is large and compact, and the berry is large and of very fine flavor, that hangs well to the bunch. The fruit sold well and at good prices. Champion was ready this season August 28th, Hartford Prolific Sept. 4th, and Concords Sept. 9th, but on account of the prolonged summer droughts fruits ripened a few days earlier than usual.

OUR GRAPE CROP.

Perhaps it may not be uninteresting or out of place here to give a synopsis of our beautiful crop of grapes this season, as they appeared on our grounds. It was certainly the finest sight of the kind I had ever seen, and it was difficult to realize that such a crop of fine

fruit could be produced. Many came to witness it and testified to its unusual excellence. The plantation consists of 250 vines, and their net product was 5,000 lbs., of first-class fruit, that sold for \$400 in the market. The average product per vine was 20 lbs. At the same rate of planting, an acre of ground would contain 544 vines, and their united product would be 10,880 lbs., $5\frac{1}{2}$ tons, or in value \$870, an excellent showing doubtless for grape-growing in this country, with all its disappointments and frigidity. According to the late report issued by the Commissioner of Agriculture, at Washington, U. S., 1880, on grape growing and wine making for that country, the highest yield per acre for that county, Kent, in the State of Michigan, was 10,000 lbs., and the average for the counties of the State was 45.23 lbs. per acre. At the present time wine making is not attempted among us, the market readily absorbing the whole crop of grapes, as soon as it is matured.

SUGGESTIONS.

1st. As the American people at the present time are deeply concerned about their grape culture and wine-making as a national industry, and are earnestly collecting official statistics relating to them, would it not likewise be well for us also to be awake in this matter, and more earnestly encourage and assist grape growing amongst us?

2nd. Would it not be a most successful means of modifying the excessive use of ardent stimulants amongst us, and prove a great national blessing to so encourage a supply of home made wines, the pure juice of the grape for general and domestic purposes.

3rd. Can any good substantial reason be successfully urged why this should not be done, seeing our facilities are so favorable?

4th. I would most respectfully sug-

gest and advise that this subject be taken up and thoroughly discussed in public assembly, at the next winter meeting of our associations.

All of which is most respectfully submitted.

B. GOTT.

Arkona Nurseries, Nov. 21, 1881.

TREE PLANTING.

A DUTY OBLIGATORY ON THE STATE !

A Paper read before the Ontario Fruit Growers' Association, by B. Gott, Arkona, Ont.

Our theme, you say, is again *tree planting*, and perhaps you will feel inclined to call it hackneyed, stale, &c. But after much mature and sober consideration of the subject in its various phases, we are increasingly impressed with the validity of our position concerning it. The very nature of the work in its importance and extent at once invests it with this high pre-eminence. We hope, therefore, that while we quietly pursue the line of our argument to its close you will kindly give us your calm and candid attention, and that we and our subject may be treated at once with becoming manliness and Christian grace. The proposition though somewhat startling and deviating slightly from our accustomed notion of things is still at once simple and very plain, viz.: That it is the duty of the State to encourage tree planting wherever the need exists. The force of the statement may be made more clearly to appear from the following very proper considerations: 1st. Nothing so promotes the best interests of a country's healthfulness, beauty and utility, like extensive and judicious tree planting, and it is the recognized duty of the State to encourage, and in every possible way, secure these much valued properties to her people. 2nd. It is the duty of the State to aid and encourage national agriculture, and our

proposition is analogous and closely related to it. That the encouragement of agriculture is a duty of the State is clearly apprehended in the customs of all civilized and progressive nations; witness Old England, France, Germany, the United States of America and Canada. The leading and honored countries annually lay out millions of the public monies of the State for the support and encouragement of their national agriculture. And by this means have perfected the highest and best systems of popular agriculture known. Why is this encouragement found needful and beneficial? Because simply that it is a well known demonstrable fact that stability and permanency of the state cannot exist without it. In some countries, as ours for instance, this is absolute because it is the main source of production and the treasure house of the wealth and material greatness of the State. In many respects these remarks will forcibly apply to general tree planting and forestry. Those noted centres of power, of wealth and of civilization already mentioned, not only acknowledged the general truth of our proposition, but are generously and studiously acting upon it in the millions of acres of noble forest wealth to be inspected on their borders. Are we doing anything in this direction? But, 3rd. It is the duty of the State to protect and encourage her educational interests. This as a measure of increased efficiency and wealth is also closely allied to our position with respect to tree planting. The duty of the State to foster educational interests among her people is a position now generally accepted, and needs but little attempts at proof. The force of this practical truth is abundantly exemplified in every day transactions of all great and prosperous people, and indeed it is itself the great foundation, the "chief corner stone" of all great-

ness and prosperity. But again the burden of general and extended tree planting is work, at once so ponderous and so exhaustive, that individual and isolated effort is inefficient and pales away into utter insignificance before it. Also the tastes and personal opinions of men with respect to any great public matter are in themselves so varied and in some cases opposite, that but little real progress can be effected in any one direction. This may be greatly modified and much better results become apparent when the overruling wisdom of the State presides. But further the individual life of man is in itself found to be too short and too uncertain for any great public endowment requiring length of time and great concentration of active forces. All acknowledge that tree planting for the good of themselves and their posterity after them is their duty, and that it should be done, but individual effort, if it happens to be in the minority, is singularly and painfully unavailing. If men have the assurance that their work in any one direction is appreciated by those in authority over them, and that it would eventually overcome all hostilities and be a great and pleasant success in the future destinies of their country, there is little possible doubt of the astonishing results. Self-interest, too, being in the general direction would render the task less imposing and very greatly assist in the matter. But we must very briefly proceed to consider the nature of the question, and the nature of the obligation the State is laid under to encourage it. By tree planting we would of course be understood to mean the planting of living trees for ultimate results, as for timber, for fruit, or for ornamentation. All tree planting may be properly included as regards the results under the head of one or other of these three great classes or departments. The latter two classes of tree

planting are easily got along with, and require but little from the State in the way of assistance and encouragement, as the prevailing and powerful motor and stimulus, self-interest, as we have before said, is in the line of this direction. It can always be appealed to, and is always capable of great results if a moderate amount of encouragement can be secured. By this means the prosperous farms and beautiful and happy homes all over this favored country are secured. The most obvious encouragement here required from the State will simply be good and efficient measures for the best possible protection of the products after they are attained. These, I suppose, we ought to consider, we assuredly have at least in Canada, as the man who dares to enter our orchards and tread or cut down our fruit or ornamental trees is most severely punished *if we can catch him*. And so of the man who carries off our fruit by the bagful. We, however, sometimes think according to our experience in this matter that the moral sense of wrong that is stamped upon the minds of our perambulating youth is but very feebly made, and that if we had them securely in our hold we should much relish the duty of impressing it more efficiently upon their shoulders. The fact undoubtedly remains that orchard protection in this country, as at present understood, is not considered satisfactory either for purposes of encouragement or safety. But though those classes of the subject are so easily managed it is not by any means just so with the first, for although the principle of self-interest may also, to some extent, exert an influence, here it is at a much further distance away, and consequently is neither so active or so potent in accomplishing good results. Other effectual motors must be applied. We realize as a fundamental principle in the govern-

ment of nations that the vital interests of the State is in the hands of her ministers, and that these should, as in duty bound, be thoroughly alive and wide awake to those interests. We would humbly suggest, therefore, that the influence to be brought to bear on a people for the advancement of any great public improvement might be :

- 1st. Limited measures, bearing mildly on the subject to be advanced, may be passed in the Legislature of our country advising and offering inducements.
- 2nd. Statistics and reports as to the actual state of the country in this particular might be authorized to be made and sent in to the minister of the department, effected at greater or less intervals of time. Other forms of inducement and encouragement we shall further consider subsequently, but it is evident that simple means backed up might sufficiently influence to move in the proper direction. We will now in the meantime, as briefly as possible, proceed to consider some of the advantages of tree planting.

And these will appear to be : 1st. To embellish and beautify the landscape. Of the force of this statement we are all more or less keenly sensible whose homes are happily cast in the midst of the attractions. The converse of this is to be witnessed by the denizens of the trackless prairies of Central America. 2nd. To provide for the use of the inhabitants timber and fuel for mechanical and domestic uses. For these purposes alone an abundance of fine timber may be the means of saving to a country many millions in value annually. 3rd. To regulate and modify the climate of the country. That forests have an effect upon climate is abundantly attested by the best of proofs. See for a full and satisfactory statement of this whole matter "*the report upon forestry*" made to the department at Washington, 1877, by F. B. Hough, Commissioner.

We are indebted to this admirable and exhaustive work for much of our subject. A work that should be in the hands of every studious citizen of our country. Though it is not meant that trees alone make the conditions of the climate of a country, yet it is meant that they are important recognized factors in the distribution and modification of climate. 4th. To encourage and distribute rainfalls. This phase of the subject has had given to it much scientific and mature attention of late, and it is a subject that is in every way worthy of attention, for what matters it though our country be never so fertile if our rainfall be insufficient or very poorly distributed? These and each of them should be inducements or arguments abundant to the inhabitants of any country to be studious and lavish in their efforts at tree planting in their midst. Surely none of us wish to have brought upon us by our own efforts the converse of this state of things! For a moment we will now look at the nature and the extent of the obligation to plant trees, and we can get perhaps the best view of this kind of obligation by considering it as 1st, pecuniary, 2nd, physical, and 3rd, moral. The pecuniary argument is the money view or estate argument, and of course is at once a very potent one. It may include all the direct advantage to be got from the trees in the shape of fruit, and its immediate effects, also, in the shape of beauty. This is a very extensive consideration, and yet it is lowest of all the arguments, and consequently we bring it on first, and also because it is the argument that is most readily appreciated. It is endless in its relations to our material interests, and is therefore a fit and proper subject for the highest encouragements of the State, for if it is not, then what is? The second or physical argument grows out of the first, and is somewhat de-

pending upon it. It has reference to the pure animal or physical enjoyment growing out of the duty and following the practice of tree planting, and may be considered in its effects aside from its money value. In planting trees we are regaled, invigorated and satisfied by their fruits, we are protected, warmed and comforted by their timber, or we are instructed, pleased and delighted by their nobility, grandeur and beauty. This argument is very extensive in its import, most readily appreciated and very forcible in its character. The third or moral argument is the product of the two former ones and their consummation. It has reference to the effect on the character of a people thus enriched and ennobled by their wealth of profitable and beautiful trees. To say that tree planting has no moral side to it, nor can have, is to run contrary to our experience, and is bordering on the absurd. It has! The people who are so abundantly enriched, both pecuniarily and physically, by an abundance of fruitful and profitable trees are capable of higher developments of moral character than the people who have not these advantages. Their trees have the effect upon them of supplying their needs and of inspiring their hearts with gratitude. Not the gratitude merely of the untutored Indian who roams in nature's boundless forests, unconscious of the true character of the benefits surrounding him, but rather the gratitude of reflection, of enlightenment and of a heightened devotion. As we have already hinted, we must now very briefly glance at the nature of the encouragements looked for in this particular. This may be best stated in the following order: 1st. Government premiums should be offered for the most extensive, best kept and best bearing orchards in different parts of the country, and to be decided by a Government appointed visiting

committee. These premiums may be in cash, or they may be in diplomas, or in both, as the end and object is best furthered. And the effect would be very influential and marked on the destinies of the country. The principal influence may be ascribed to competition, which is a most powerful motor in human affairs. 2nd. A commutation of taxes or statute labor should be granted from time to time for trees planted by the roadside, to be determined according to the number and value of the trees planted, and properly cared for, by an officer appointed for the purpose. The influence of this kind of tree planting is very marked in the annals of a country, and even the traveller will tarry to bless his country for this generous and rich provision of his nature. On account of the difficulty and danger of this sort of tree planting it needs and should get special protection for its successful issue. 3rd. To encourage forest tree planting on a large scale over the country, assurance of special favors and rewards should be publicly made known. These may consist of commutation of all taxes for more or less years, according to the extent, variety and perfection of the plantation, to be determined as before by a visiting committee. Further special premiums should be offered at stated periods to the owners of most approved forest tracts, to be determined by efficient judges appointed for the purpose. The influence of this kind of tree planting on a country is so great and so lasting and widespread that we lay special stress upon it. Moreover the expenses, difficulties, hinderances and discouragements are so constant and so formidable that special inducements and helps must be supplied by the State, even at some sacrifice, in order to accomplish telling results. By these or similar means many tracts of fine, thrifty forestry would

soon spring into being over the face of our beautiful Canadian landscape to replace the sites of those old primeval forests so rapidly disappearing from the scene. The objections to this kind of tree planting may be stated in brief to be: 1st. Your teaching would depreciate and ultimately destroy private enterprise. This objection misinterprets the force of our teaching altogether. We do not mean to assert that the State should do all the work and the citizens nothing. No, no! We rather mean simply that it is the duty of the State to *encourage private enterprise*, and in every possible way to help the citizen. 2nd. Life is too short for such extended operations, and we should never see the results of our labor and care. In part we acknowledge the force of this objection, and in a larger part we do not, for though life is short, as we all sadly feel, yet many fine results have been seen by the operators in this direction. Besides, the objection has much of its point from a well known selfish principle influencing very many to leave as little as possible to those who shall come after us for fear our children will never thank us for it. 3rd. Our farm is too small to spare land for tree planting, as we want all our soil for grain raising and grazing. This objection is positively absurd on the very face of it, as any one traversing this country over hill and dale will readily see. How many thousands of such acres of Canadian soil are now lying in a state of comparative uselessness that might advantageously be used for purposes of tree growing? I stop not to answer; we all know they are immense. 4th. Our nursery men have not turned their attention to the matter of extensive forest tree growing, and consequently trees are difficult to obtain, and beyond our limited means. The force and

pungency of this objection can be readily dispelled, like the morning cloud that passeth away. Only let the want be felt, or gently hint that the demand is likely to occur, and the stock can be supplied by the million, and on the most liberal terms; and we have every confidence in the supply if there is only likely to be a good demand. 5th. Trees planted by the roadside have a tendency to impede traffic and to harbor wet, fungus, &c. This objection, though pretty well rooted over this entire country, is mainly resting on misrepresentation, and is contrary to our experience. If proper kinds of trees are properly planted by the roadside, and moderately proper attention can be given to them, they will grow up to be the beauty and adornment of our country, and a source of everlasting blessing, and consequently cannot be charged with the detriments objected to. But 6th, and lastly. Trees in blocks exhaust the soil, and by their shade exhaust neighboring fields. In answer we would ask, "Exhaust what soil?" for they cannot exhaust the neighboring fields to any perceptible extent, and they positively enrich the soil on which they are now standing by their gaseous and vegetable deposits. As for the shade complained of, this is so meagre that it is scarcely worthy of a passing consideration. With these objections and their answers, we shall now close our paper, and confidently leave the resultant consequences to the mature judgments of your mind. We only regret that it was not in our power to bring better and more thorough ability to bear on a question at once so interesting and so important. We hope yet to see the day when the measures here recommended shall be recognized by the authorities of this country.

January 18th, 1882.

THE MAYFLOWER TOMATO.

Those who have seen the Tomato grown as a garden vegetable only, to supply the wants of the family, can hardly be aware of the important position which it now occupies among market crops. In some localities, in fact, it rates in importance before any other product of the soil. This is owing to the immense quantities used in the canning factories, amounting in some establishments to over a million of cans a year.

The principal points to be desired in a Tomato are earliness, firmness, good, uniform size and shape, bright color, pure flavor, perfect ripening, good keeping quality and productiveness. To unite all these in one variety has



THE MAYFLOWER TOMATO.

been the aim of originators of new seedlings.

The Mayflower is the latest competitor among these claimants. It was

raised by Mr. F. H. Hosford of Vermont, and after several years' trial, considered superior, in several respects, to any of the older kinds. It is very early, ripening but a few days later than Little Gem, and averaging in size about one-third larger than Acme. It is of a glossy, bright red color, ripens evenly and completely up to the stem, is perfectly smooth and almost globular, slightly flattened; flesh solid, with few seeds, and of a rich pure flavor. Its productiveness and shipping qualities are claimed not to be equalled by any other variety. The Massachusetts Horticultural Society, at its last exhibition, held in connection with the American Pomological meeting, awarded the first prize for the best new Tomato to the Mayflower.

THE ESSENTIALS FOR SUCCESS IN PEACH GROWING.

A good degree of special knowledge of the business, and a taste suited for the work.

Selecting suitable land upon which to plant. Land upon which the peach has grown within 15 or 20 years is unsuitable; wet land is not good; but moderately rich corn land upon our high hills is quite suitable.

Continuous good culture, with hoed crops (if desired), for two years, after which clean culture continuously, and no crop but the peach.

A moderate dressing of unleached wood ashes, ground bone and slacked lime annually. The orchards should not be forced to make a heavy growth or a late growth in autumn; therefore, keep mellow and clean in early summer, and stir the soil as little as need be after August 1.

Guard well against the peach borer. To do this, in May supply a wash of this nature: Use 10 pounds of good lump lime and 1 pound of sulphur, slack

to a proper whitewash consistency; then add 2 quarts of soft soap, or its equivalent of whale oil soap, and if convenient thin down as required with a strong decoction of tobacco. Having this, lay bare the collar and main roots of the trees, forming a sort of basin around each tree; then with an old broom wash the exposed roots, collar and trunk of each tree. This will be too offensive an application for any insect, and is also healthful. And in November mound up the earth about the tree in a small cone, with one or two quarts of wood ashes on top as a protection against mice, removing the same in May,—and thus year by year, repeat.

If possible, mulch with some coarse manure or other material at setting in of winter, not around the trunk of the tree but under the outer branches, as a safeguard against severe winters and premature spring.

Proper pruning, and this should embrace judicious shortening in.

As I have already hinted we should avoid a late growth by not cultivating after July, and also by only a moderate cultivation. The peach tree should neither be stinted nor forced into excessive growth. Avoid also heavy cropping first, by previous cutting back and thinning out of superfluous branches, and again, if necessary, by thinning out fruit. But by no means allow exhaustion of the trees. Hence, feed the young orchard moderately, and the bearing orchard fully. Excessively rich soil should not be selected for the peach, for rapid growth is quite likely to be followed by early decay.—P.M. AUGUR, in *N. E. Homestead*.

EARLY PEARS.—The following varieties give a successive supply at the North from late in July till the middle of September: Doyenné d'Été, Bloodgood, Giffard, Rostiezer, Petite Marguerite, Tyson, Washington, Bartlett.—*Country Gentleman*.

CELERY GROWING.

One of the most successful garden crops that I raise is celery. I raised the past season about 5,000 heads, of which I lost about 1,000, owing to the winter setting in so unexpectedly. The 4,000 heads saved will bring, when all sold, about \$125. This was all raised as a second crop following peas, and it did not occupy more than one-fourth of an acre. I also sold about \$25 worth of celery plants. I raise very nice plants in the following way:

I sow the seed in a cold-frame about the middle of April, and when about an inch and a half high, I transplant to beds four feet wide and sixteen in length, setting the plants two inches apart each way. As soon as the bed is finished, I have frames made of narrow strips of board and lath, the lath being their width apart. These I place over the bed about eight inches from the plants on the top of the stakes, three of which are driven on each side of the bed. By the use of these frames the plants enjoy a free circulation of air, and are just half the time in the shade (while the sun shines), and will not wilt or need watering, except at time of setting out. The frames may be left on until the plants become well-rooted. Plants treated in this way become very fine and stocky in from four to six weeks, and may then be taken up with a ball of earth as large as a man's fist adhering to each plant.

I transplant to the trenches from the 1st of July to the 1st of August. The trenches I make very shallow, about two inches below the surface after the plants are set out, some kind of fertilizer being below the plants. I have seen the best results from well-rotted stable manure. I commence to earth up as soon as the plants begin to spread, so as to keep them growing in an upright position, taking care not to choke them

with too much earth at one time. I raise the dwarf varieties, and have found the London Red the best for late keeping, also the best flavored according to my judgment. I have the trenches four feet apart, and the plants six inches apart in the trench. This, I think, is as near as is convenient for earthing up.

Before I commence to earth up I loosen the earth on each side of the trench with a hoe. I then get down on my hands and knees astride of the row, and, while holding the stalks of a plant together with one hand, I draw the earth up with the other, pressing it down firmly around the plant. The best time to do this is when the ground is a little moist, but not wet. This process is called "handling," and by many it is called hard, disagreeable work; but there is no work in the garden that gives me more genuine satisfaction. This first handling brings the plants up nearly level with the surface, and before the second earthing up I run a cultivator between the rows. I commence to harvest the celery for winter about the first of November. My way of storing is to make large beds of it on the cellar bottom, setting the celery upright, and not too close together, and using earth enough to cover the roots well. If the cellar is dry the beds may be watered occasionally, but in a damp cellar it would not be necessary, and would be apt to induce rot.—*Rural New Yorker*.

THE CALLA LILY.

This old plant is too well known to require any extended notice. If the bulbs or tubers of this lily be potted in good soil about the middle of September, and given a liberal supply of water at all times, it will quickly start into growth and give out its fine, large flowers from December to May. Manure water is very beneficial to this plant. After

flowering, gradually withhold water, and when the foliage shows signs of decay, lay the pots on their sides and give no further care until time for repotting, when the tubers should be cleansed of the old soil and repotted into new. When grown in the sitting room the leaves should have an occasional sponging to prevent the accumulation of dust.

THE TUBEROSE.

(*Polianthes Tuberosa*).

The original, single variety is a native of India, and has for many years been grown in large quantities in Southern France, where the flowers are used for manufacturing perfumery.

The double variety, which is now almost exclusively used for garden purposes, is very much superior to the single one in the size and appearance of the flowers. Owing to the easy manner in which they can be cultivated, they are found in almost every garden, while their rich perfume and clear white color have made them very desirable for all sorts of floral designs.

To make the flowering of Tuberoses a success, it is indispensable to procure sound bulbs, of good size. If the center of the bulb, or "flower-germ," is not perfectly sound, it is hopeless to expect flowers; and any bulb, be it ever so large, that has flowered once, will not bloom again.

It is a common mistake among amateurs to select the largest bulbs, when buying. Frequently, the flower-germ in large bulbs has been so far advanced as to get killed or injured by the drying process which the bulbs have to undergo to keep them sound over winter. A medium-sized, well-formed bulb, with a hard, sharp-pointed neck, is the kind to be recommended, as these can, with proper treatment, be depended upon to flower successfully. There is no way of telling, in the dry

bulb, the difference between the single and double variety; the buyer is depending solely on the honesty of the dealer. I think it well, however, to remark here that it is not always the fault of the dealer if what is sold as the double comes single. The double variety is only a sport of the single one, originally produced by garden cultivation; and it is not a very uncommon occurrence to see them running back again, especially if the bulbs are grown in the same ground a number of years.

Before planting the bulbs, all the little bulblets, or "sets," which are always attached to the main bulb, should be removed, as well as the sprouts or eyes that may be showing on the sides of the bulb. By this operation all the strength and nourishment that are contained in the bulb will be preserved for the development of the flowers.

The proper time for planting, in this vicinity, is the latter part of May or beginning of June. It is of no advantage to plant Tuberose before the soil is thoroughly warm. The bulbs should be placed at least three inches under the surface of the soil, and will do best in rich, warm, sandy ground, exposed to the full sun.

If wanted for early flowering, the bulbs may be planted about the first of March, in small pots, with clear sand or sandy soil, placed in a hot-bed, and replanted in larger pots, with rich soil, as soon as started. They must not be planted out, or left uncovered, before the end of May.

The "Pearl" Tuberose, a variety of later introduction, and in general respects similar to the old double, bears somewhat larger flowers, on considerably shorter and stronger stalks. Although the flowers of this variety do not keep as long as those of the old kind—a consideration of some importance

to the professional florist—its dwarf habit makes it most valuable for greenhouse cultivation.—*American Garden.*

LOST RUBIES, THE MONARCH OF MARKET RASPBERRIES.

Few varieties of fruits have called from the press and the people such attention as Lost Rubies. Its suggestive name, the uncertainty hanging over its origin, and its remarkable qualifications lead speculative minds to a wide and suggestive field for thought and controversy. We have fruited it six years, and every season it was a surprise and a wonder to us; an enigma which we sought to unravel by submitting it to leading pomologists, but their evidence all went to convince that Lost Rubies is a choice seedling of which they have no record. Coming to us, a few scattering plants with dark, purple polished, almost thornless canes, with evidences of aristocracy, mixed helplessly with a mass of bastards—wild vagabond varieties that never set one single berry, good or bad—the counterparts of those thorny barren pests growing in the wild underbrush by the acre, we had reason to believe we had a choice seedling, but having no absolutely positive evidence as to its origin, and wishing to stand fairly on the records, we stated from the first that its origin was involved in obscurity, and offered it on its merits alone. We are willing to withdraw the cognomen if proof is given that it should be withdrawn. Here is a red raspberry possessing many of the qualifications of foreign sorts, rivalling the grand old Franconia in size, quality and beauty, yet in other respects giving evidence of being a native, ranking in hardiness and vigor next to the iron-clad Turner. Ask any fruit man if he knows of a bright, firm, large and superior flavored red raspberry that will endure winters when mercury marks 10 to 20

degrees below zero. No, he will say there is no such variety. Well, Lost Rubies is just the berry that fills the bill. Plant it in a field apart from all other varieties, and it will not exhibit its remarkable productiveness, yet it will yield well there. But plant it in blocks, with a row of Cuthbert every ten or twenty-four feet, and if your soil is anything like mine you will see the largest yield of fine fruit imaginable. I have not found anything to equal it. It ripens with the Brandywine, and continues in bearing several weeks in favorable seasons; not a few scattering berries, but large pickings for market. One need not wait a year to see its fruit. If a few inches of the old cane is left on at planting it will bear fine specimens the season planted—an indication of its vitality and productiveness. Having tested almost every popular variety, the Lost Rubies takes the lead over all for a profitable market berry.—*Fruit Grower*.

T. C. Robinson, of Owen Sound, says: "No one can convince me that Lost Rubies is akin to foreign sorts; the leaf and cane are as plainly native as our Canada thistle. I want to plant more of it."

BOOK NOTICES.

In Press. HOUGH'S ELEMENTS OF FORESTRY.

Designed to afford information concerning planting and care of Forest Trees for ornament or profit, and giving suggestions upon the creation and care of woodlands, with the view of securing the greatest benefit for the longest time. Particularly adapted to the wants and conditions of the United States. By Franklin B. Hough, Ph.D., Forestry Division, Department of Agriculture, Washington, D.C. 1 vol., 12mo., illustrated.

This work is designed to present a concise outline of the general subject of Forestry in its various relations, and especially to afford directions for the planting and care of trees in groves, or as windbreaks, or for ornament.

Although the range and capabilities of species will be noticed, with reference to the whole country, and the special interests of other regions will be included, particular attention will be given to the subject of tree-planting in the Western States, and on the borders of the great plains, with suggestions as to the methods best adapted for securing success under the difficulties there encountered.

The work will be illustrated by engravings in the text, as the subject may require. Technical details will be avoided, and the greatest care will be taken that the definitions and terms used are concise, plain, and easily understood. No theoretical discussions will be introduced, and no statements but those founded upon approved authority.

The author has been several years, and is now, engaged under an appointment from the General Government in investigating the subject of Forestry in the Department of Agriculture, and his reports, published by order of Congress, have received the approval of the highest authorities upon Forestry in Europe. They were awarded a Diploma of Honor at the International Geographical Congress at Venice last autumn. Robert Clarke & Co., Publishers, Cincinnati, O.

BLACKBERRIES.—The Snyder is gaining popularity on account of its great hardiness and productiveness. Ellwanger & Barry regard it the best for family use, for although only moderate in size, it ripens thoroughly throughout without the unripe core of some other sorts, and it is very pleasant in quality. The Kittatinny had become a general favorite before it was known to be so liable to the yellow rust, the fruit being better and the canes hardier than the Rochelle. Wilson has long been the great market blackberry of New Jersey, but farther north it does not endure the winter. Our plants, after bearing a few times a large and not very good berry, gradually perished during the successive winters.—*Country Gentleman*.

SHELLING PEAS.

Pink sun-bonnet hanging down ;
O'er a fair face half a frown ;
Basket tipped up on her knees—
Maiden busy shelling peas.

Looking o'er the garden wall,
Youthful figure, straight and tall,
Lounges with a careless grace,
Straw hat pushed off sunny face—

And a pair of lazy eyes
Look with cool and calm surprise
On the fingers plump and white
Shelling peas with all their might.

"Such a busy little bee
Puts to shame poor thriftless me!"
And a yawn, half made, half real,
To these words gave sign and seal.

Pink sun-bonnet nods assent,
Fingers give the pods a rent,
As though saying, "Were these you,
I'd soon show you what I'd do!"

"So you think I ought to be
Quite ashamed of this 'poor me,'
Who bewails his lazy lot
And to better it tries not?"

Pink sun-bonnet gives a nod,
Cracks a fresh new glistening pod,
Which, exploding, seems to say,
Answering for her, boldly, "Yea."

Lazy-eyes dart a quick look,
Naught but silence will they brook ;
Bending closer they peer down
'Neath the bonnet's clumsy crown—

"I would toil and strive each hour.
Working with a will and power,
Had I aught to WORK HARD FOR—
Some sweet bright reward in store."

Pink sun-bonnet laughs out now,
And the face is all aglow,
As she answers, pointing down
To her basket with a frown—

"Lots of shell and little peas ;
Words are well and sometimes please ;
But words are SHELL—IT'S FRUIT we need :
Talk is easy—prove by deed!"

Quick the lazy eyes flash fire,
And the owner bends down nigher,
Till the color in his cheeks
Fades and flickers as he speaks—

"Ah, but 'tis within the shells
That the perfect fruit first dwells :
ALL my words I'll prove quite true,
If my REWARD may be you!"

Pink sun-bonnet's still and dumb ;
Busy fingers quite o'ercome ;
Drop the basket off the knees,
And down roll the half-shelled peas.

"See, you work in vain alone—
Without HELP nought can be done ;
May I then through our lives be
HELPMATE to you loyally?"

Two brown hands clasp fingers white ;
Lazy-eyes grow clear and bright ;
Pink sun-bonnet 'gainst her will,
Looks up with cheeks pinker still,

And again it gives a nod—
Then a noise! Was it a pod?
SOMETHING sounded. As you please.
It all happened—Shelling Peas.

DOMESTIC RECIPES.

ORANGE SYRUP.—To one cup of the juice of ripe thin-skinned oranges add one and a half cups of powdered sugar, boil and skim, when cold bottle and put in a cool place. Fine for flavoring custards or pudding sauces.—**AARON'S WIFE, in Prairie Farmer.**

LEMON JUMBLES.—Ingredients : Eggs, one ; sugar, one teacup ; butter, two-thirds teacup ; milk, three teaspoonsful ; cream tartar, one teaspoonful ; soda, one-half teaspoonful ; lemons, two ; flour. Use the juice of both lemons and grated rind of one ; mix rather stiff, roll out, and cut with cake cutter.

BAKED TOMATOES.—Sprinkle a layer of bread crumbs into a yellow nappy or a baking dish, and spread over it a layer of chopped raw tomatoes, seasoned with pepper and salt, and bits of butter. Fill up the dish, having the upper layer of bread with bits of butter. Bake for three-quarters of an hour. An excellent breakfast relish.

APPLE PANCAKES.—Ingredients : Apples, twelve ; eggs, twenty ; cream, one quart ; cinnamon, two drachms ; nutmeg, two drachms ; ginger, two drachms ; crushed lump sugar, six drachms. Peel the apples, cut in round slices and fry in butter. Beat up the eggs in the cream, add the spice and sugar and pour over the apples.

FRENCH VEGETABLE SOUP.—To a leg of lamb of moderate size take four quarts of water. Of carrots, potatoes, onions, tomatoes, cabbage and turnips, take a tea cup each, chopped fine ; salt and pepper to taste. Let the lamb be boiled in this water. Let it cool ; skim off all fat that rises to the top. The next day boil again, adding the chopped vegetables. Let it boil three hours the second day.

CRANBERRY ROLL.—One quart flour, one heaped teaspoon baking powder, sifted together ; mix into a soft dough with sweet milk ; roll thin and spread over it a pint of cranberries, and a cup and a half of sugar ; roll it over and over into a roll, and put loosely into a pudding bag, and put in the steamer over a kettle of boiling water, and steam one hour. Serve with a rich sweet sauce.—**AARON'S WIFE, in Prairie Farmer.**

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[No. 5.

CHRYSANTHEMUMS.

The colored plate which adorns the present number will make our readers acquainted with three distinct sections of this showy flower—the Japanese, Pompon, and the Chinese. Figures seven and nine indicate the Japanese variety, nine being the large white flower so prominent in the upper part of the group; one and two are yellow and rose-colored Pompons, and the remainder belong to the Chinese section.

In our climate, except in the sections where the autumnal frosts are postponed quite late by the modifying influences of large bodies of water, the Chrysanthemum needs to be brought into the conservatory or cool greenhouse in order to enjoy their bloom. Their season of flowering is late in the autumn, and on that account an almost indispensable plant, making the conservatory gay with its crimson and gold, when there is scarcely any other plant in bloom.

It is of easy culture, growing readily from cuttings, or suckers, or divisions of the roots, yet it has seemed to the writer that the best results are obtained by growing them from cuttings. These

may be taken off in the spring, and as soon as they are rooted put into small pots, from which they should be shifted to larger when their growth requires it. A six inch pot is large enough for the last shift, in which they can remain until they have bloomed. They should never be allowed to flag for want of water, but be plentifully supplied all the time they are growing and blooming. Nor do they thrive as well in great heat as when kept in a cool place where they can have plenty of air.

After the young plant has got well established in the small pot and has attained a height of five or six inches, the terminal bud or top of the plant should be pinched off, so as to make the plant throw out branches, and as these branches extend they will also require to be pinched in, so that a bushy and symmetrical form may be secured. By the middle of August this pinching must be relinquished, so that the plant may form its flowering buds in season for its autumnal display.

The soil in which the plants are grown should be well enriched with old and thoroughly rotted manure; that from the cow-stable is usually preferred,

and used in the proportion of one half, the other half being good loam. An addition of finely ground bone, if convenient, will not be amiss, nor would an occasional watering, say once a week, with manure water, be unacceptable to the plants. They will bear liberal treatment, and abundantly repay your care in the profusion and wealth of bloom.

It is not worth while to take the pains necessary to grow them from seed. They are comparatively inexpensive, and can be had of the florists of such colors and forms as may be preferred. Besides, new varieties are being constantly produced, which crowd out the older sorts, and one always wants the newest, even though they may not be any better than their predecessors.

One who has seen a well ordered exhibition of Chrysanthemums, when the hall is filled with well grown plants, each one a mass of bloom, so that the room is ablaze with the gorgeous display; one who has seen such a show does not wonder that the Japanese have their Chrysanthemum festival. In that mild climate and with their gardening skill, these showy flowers are produced in great perfection and in most lavish profusion, so that in their season the whole Island is bright with their beauty. It must be worth a voyage to Japan to have the pleasure of enjoying the floral display which is presented to the lover of flowers in that equable climate, where the Japanese Iris, Japanese Lilies and Japanese Chrysanthemums in acres of beauty delight the eye.

OPINIONS OF MEMBERS.

We are very much pleased with the improved appearance and size of the *Horticulturist*, and the Annual Report is exceedingly interesting and very valuable.

HENRY WIGHTMAN.

Marnock.

The *Horticulturist* becomes more interesting every number. Since the introduction of flowers, I find it becomes more so to wife and daughters, and others interested in that line of study.

WM. GILLETT.

Marchmount.

I am glad to see the improvement in the *Horticulturist* this year, and I think the Directors deserve a hearty support for their enterprise in giving the members so much for their money.

H. C. FINCH.

Mecunoma. Muskoka.

I am well satisfied with the *Horticulturist*; every one who cultivates fruit should have it. In it I find a great deal of useful information. The Brighton grape you sent me was received in good condition and grew.

J. B. BURK.

Brougham.

Enclosed I send you my subscription to the Fruit Growers' Association of Ontario. I consider that the best spent dollar I lay out in the year. The *Canadian Horticulturist* has very much improved of late. I take two American agricultural papers, but they do not seem half so practical as your paper. Your list of grapes that would suit Ontario was a timely article, and your plates showing how they should be

trimmed are worth their weight in gold.

R. LEWIS.

Maitland.

I am not surprised to see so many expressing their satisfaction at the improved size and appearance of the *Horticulturist*, and I, in common with all (I hope) of your readers, consider so valuable a book well worth preserving for future reference, and here propose to give some practical instructions of the manner of keeping the year's numbers in compact form. First, if the paper is folded when received, it should be placed against a warm stove pipe, or something warm, and rubbed with the hand till the crease disappears, then it will be in better shape to read and lay away. When all the numbers are received at the end of the year, strip off all the outside covers, placing the illustrations, index and title page in their proper places, and the backs all true, then take stove pipe wire, or any soft wire, make two or three staples about half-inch wide, and long enough to go through the book and clinch; make holes as near the back of the book as possible with a brad-awl to suit the width of staples, which put through and clinch with the handle of the awl, using pressure only; but, of course, cutting away any surplus wire before the clinches are closed down. Now prepare and glue a double fly sheet to each side over the staples, being careful not to put on a strip of glue more than just sufficient to cover the staples. Any strong manilla paper is preferable to white tea or printing paper. Be sure to have the fold on a straight line with the back, as this is to form the inside of the hinge to the back. Cut some card-board just the size for the covers, which glue to the fly sheet, but keeping the edge of the card-board back a quarter of an inch to form a hinge at

the back, and press all firmly between two boards in the vice of work-bench. As soon as the glue will hold, cut a strip of binders' cloth, green or buff window holland, the length of the book, and wide enough to cover the back and catch the sides a half-inch or more, which glue fast to the back, bringing over the edges to catch the card-board on each side. Make this tight and smooth, press again and smooth down the back, and press the cloth in to form hinges. While standing for a few minutes select two of the cleanest outside that had been stripped from the monthly parts, cut the edges true and glue on to the covers of the book, leaving a small strip of the cloth at the back exposed. On my last year's I used the cover that contained the officers for 1882 for back. The month can be erased from the title page with a common ink eraser, or fine emery cloth. After it is dry cut all down true with a sharp chisel, first having the leaves firmly compressed between two boards. The edge of the chisel should be a little rough, and, of course, drawn lengthwise. If all has been done with any taste, you will be proud enough of your book to show it to your neighbour, and likely get him to become a member. In this way I bind my Catalogues, *American Agriculturist*, *Rural New Yorker*, &c., which I find more convenient than to have them lying about my room.

I have invariably found my best bunches of grapes nearest the ground. Last year I trained very low, and found that on our warm, dry soil, grapes ripen more regularly, earlier, and give finer bunches, than if trained against a wall to bake in the sun, as some of mine did last year. All this suggests low trellis and low training.

J. P. COCKBURN.

Gravenhurst, Muskoka.

REPORTS ON TREES RECEIVED.

I'm overwhelm'd with grateful feeling,
 Until my mind is past concealing ;
 This saying surely you believe,
 "To give is better than receive."
 That book itself, with such a store
 Of information, is worth more
 Than all we give besides the rest—
 Trees, plants and horticulturist.
 And then the trees have done so well,
 Their value I can hardly tell,
 Except the golden grimes by name
 Was dead and dry before it came.
 Then grapes and rasps and seedling glass
 My expectation did surpass.
 If every person did but know
 The gain and pleasure they forego,
 They would come all with such a rush
 Your institution they would crush,
 For it would be in vain to try
 So many thousands to supply ;
 Then just keep quiet, or I fear
 You may endanger your career.

WILLIAM BROWN.

With respect to my eight years' experience as amateur fruit grower in the Town and City of St. Thomas, East, Pears for general culture for profit I strongly endorse the (1) Flemish Beauty, (2) Bartlett, (3) Clapp's Favorite, it has blighted some with me. Duchesse as dwarf succeeds well. The Sheldon is a fine flavored pear. The Vicar blighted badly, I had to cut it down. The Clapp's Favorite I received some years since is now a fine tree, has borne sparingly three years. The flavor is exquisite when picked early and ripened in the house. Great care must be taken not to allow them to ripen on the tree, as they rot from the core and lose all flavor. Grapes—I have met with the best success here with Concord and Agawam. I have also fruited the Barry, Merrimac and Salem. The above Rogers Grapes were badly killed on the trellis through the severe frosts of last winter. I also lost many Plums from the same cause. I cannot write well of the Eumelan. I think it a poor, insipid grape. The Burnet is

with me a very slow grower, has not fruited yet. The best point I see in it yet is a very pretty leaf. The Downing Gooseberry thrive well with me until cut off by frost last winter. I do not think it is to be compared with the Houghton for cultivation, though the Downing berry is larger, I think it lacks the flavor of the Houghton. Lee's Prolific Currants I do not find, after two years' growth, to exceed, if equal, Black Naples. In Crab Apples the Hyslop and Soulard are by far the finest fruited and growers. The Senasqua Grape of last year did not start. The Ontario Apple has done well in growth, but not fruited yet. In shrubs I can especially recommend Hydrangea Grandiflora for hardiness, length of blooming season and beautiful appearance. I am pleased to write that I received Eight First and Second Prizes at the Southern Counties Fair, 1880, for fruit grown by myself (not collected). My stock of knowledge was gained, to a large extent, from yearly reports and monthly papers of *Horticulturist*. I find the Dominion Strawberry a useful variety, the crop coming in when the Wilson is failing. I believe the Sharpless a good acquisition to our list of good croppers. Excuse lengthiness, from yours truly,

HENRY N. READING,

St. Thomas.

Machinist.

A TIMELY HINT.

A very creditable appearance our little journal makes now. And it is a token for good to see more of our members giving us the benefit of their experience.

"In the multitude of counsellors there is safety."

Some keen observers of cause and effect may be, as wee Scotch bodies say, *a wee bit blate* (don't think the Editor

himself understands that), or they may not be blessed with the pen of the ready writer; but let me assure them our Editor is, *even if he does not understand the Scotch dialect*. Let us have the results of your experiments, your failures and successes; he'll bring them all out in shape becoming his sheet.

JOHN CROIL.

Aultsville.

KIND WORDS.

It is gratifying to observe how very much the *Horticulturist* has improved. The Association is deserving of high credit. No florist or horticulturist should be without it, for it contains a very large amount of valuable information.

THOMAS BRIGGS.

Kingston.

I received the Annual Report for 1881, and am very much pleased with it, and think its outside appearance is much improved.

FRUIT IN THE ALGOMA DISTRICT.

My home is here, on St. Joseph's Island, in the District of Algoma. We expect to have a fine country here for fruit growing. I planted some small fruits last fall, such as grapes, berries, &c.; my neighbors have also planted more or less. We settlers have only been here three or four years, so not much fruit has come into bearing yet; but we have as good land for fruit-raising as there is in Canada—rolling land, mellow soil, slightly mixed with limestone gravel, easily cultivated when rid of stumps. Of course we have a great variety of soil, some good and some inferior. It is my humble opinion that time will bring us to the front as a fruit-raising section.

Yours truly,

STEPHEN CADHAM.

GLADIOLUS BULBLETS.

DEAR SIR,—In your January number, in treating upon Gladiolus culture, you state that the small bulbs which are found adhering to the large bulb should be kept out of the ground one whole season. Please give the reason for this in your next. W.

An old Latin maxim, learned in boyhood, seems to be the best answer to our friend's inquiry: *Experantia docet*—Experience teaches. It has been found by trial to be a fact, that these bulblets do grow much better when kept out of the ground and allowed to dry for one whole season; but why this should be, what reason is to be assigned for this fact, is probably not known. It is very natural to ask the reason why, and the inquisitiveness that prompts the question, and will not be satisfied until it is answered, has led to the discovery of most important natural laws, which have been as keys to unlock vast treasures of knowledge. Will "W." please undertake the solution of his own question; it may open up the way to results of great practical value.

EVAPORATION OF FRUIT.

BY J. M. M'AINSH, KISSOURI, ONT.

The question of evaporating fruit, especially apples, is now pressing itself very forcibly upon the attention of fruit growers. In by-gone years, while good fruit was scarce, even summer and fall apples could be readily sold at remunerative prices. But now, while good winter apples find a ready sale to ship to distant markets, summer and fall apples are a drug. In this locality it is not uncommon for parties to sell good summer and fall apples at twenty cents a bag, and peddle them from house to house at that. The old process of drying them on strings is a very slow and imperfect one, but by

the improved process of evaporation a really good article can be made either for home use or for sale.

As we well know that the Editor of the *Horticulturist* keeps himself informed on all points relating to the fruit growers' interest, I hope he will give some information about how to get a fruit drying apparatus. Could any good tinsmith make one, or are they manufactured anywhere in Canada? Information on these queries would probably be acceptable to others as well as myself.

REPLY.

An evaporator was exhibited at the Toronto Industrial Exhibition in September last, which is said to have received the First Prize and Diploma, and is known as the Pacific Fire-Proof Fruit and Vegetable Evaporator. Mr. William Schram, of Waterford, Norfolk County, Ontario, has one of these, we are told, and that he says that after testing it and comparing its capacity with other evaporators, and taking into consideration the saving of fuel and insurance, he considers it the cheapest, safest and most satisfactory in the market. He dried eighty bushels of apples in ten hours, producing four hundred and eighty pounds of dried fruit. We believe that Mr. Abraham Ryckman, of Mill Grove, in Wentworth County, Ontario, also has one.

There is also a smaller evaporator, known as the Household Fruit and Vegetable Evaporator, which is designed for household purposes, for evaporating and preserving fruits, vegetables, &c. This is perhaps what our correspondent wants. It is claimed for it that it can be used on any cook-stove. Messrs. J. A. and H. Bartholomew, Vanessa, Norfolk County, Ontario, are the manufacturers. We do not know of any other evaporator that is made in Canada.

TREE PLANTING.

BY MR. WALLBRIDGE, BELLEVILLE.

Almost every one does, or ought to, set out some trees every year. The fall of the year is generally recommended as the best time; it may be, however, well done in the spring. As this communication is intended for bee-keepers, it is well to consider what kind of trees to plant.

Basswood is certainly king, coming into blossom generally just as White Clover goes out, it fills an important place in the bee-keeper's profits. If the Bee-keeper fails to do well when the Basswood is in bloom he may count upon a poor return for that year. The Linden and Lime are other names in England for another variety of the same tree. Its honey-producing quality is its great recommendation to the bee-keeper—but to others it has advantages. For beauty, there is no tree that has so large and deep-colored a leaf, and when it attains its growth it is valuable for timber. It is used for door-pannelling and in many parts of carriages and sleighs, and its timber always commands a good price. It is thus useful during its growth, and at its maturity brings a nice sum of money for the purposes indicated. Compare it with the Maple tree, so generally planted—what is that worth, either during its growth or at maturity, except for firewood. The Basswood has a luxuriant Southern foliage, and for beauty at least is equal to the Maple. Another tree of great value to the bee-keeper is the Honey Locust. This tree comes in bloom quite early, and is valuable on this account. The bees visit it almost in swarms, and the honey and pollen then brought in gets up the excitement in the hive, and breeding goes on at a rapid pace. Now this is the very thing bee-keepers want. They want strong stocks, ready to gather honey when White Clover comes

in, and I know of no tree or plant which does so much to strengthen the stock early as this Locust tree. Have your stock strong early; this is the secret of bee-keeping. Almost any stock will become strong in the White Clover season; but then the clover honey is used up in breeding, and you don't get it as surplus. If you have no Locust trees in your neighborhood, you should feed your bees, or abrade combs filled with honey already in the hive, changing combs to the centre of the brood nest, thus spreading the brood nest and giving the queen an opportunity of laying, which she will be sure to do if you give her a fair chance.

Mr. W. C. Wells, of Phillipston, the largest bee-keeper in this part of the country, attributes the good success of city bee-keepers to the Locust trees, as, by the good start from them, we get early brood, and are thus ready with strong stocks for the Clover and Basswood bloom. Besides the timber of the Locust tree is very valuable; it is exceedingly heavy, a cubic foot of it weighs about 100 pounds. It is valuable for wagon hubs, cogs for mill wheels, and other things requiring great strength; if used for gate posts it is exceedingly durable. Messrs. George Leslie & Son, of Leslieville, Ont., furnish, amongst other valuable trees, the Locust tree, of different varieties. They are all valuable, both for honey and timber. It certainly is the wiser to plant a tree which, on attaining maturity, is valuable as timber, than to plant one which, in the end, is not even valuable as a fence post, and only valuable as firewood.

I am indebted to the *Canadian Horticulturist* for valuable suggestions on tree planting. The article appears in the February number, and is by Mr. N. Robertson, Government Grounds, Ottawa. It is too long to

copy into this communication, but a few points may not be amiss. "Take the trees up so as to destroy as few of the roots as possible; cut the tops into what is called poles, eight or ten feet long, have a good root, a stem without blemish, and thus a rapid growing tree. Do not take a scraggy, stunted tree; and do not mind having the tree to stand as it did before removed, but place the side having most roots on the side where the wind will be strongest. Let the hole in which you plant be much larger than the roots, and draw the roots out to their full length. Before you put in the soil, do not let the roots get dry, but give them a heavy mulch of sawdust, manure or straw. This can be kept in place by a few spadefull of earth, and pass the mulch a foot on the hole where the roots are.

THE BEST TIME TO PRUNE FRUIT TREES.

BY J. M. M'AINSH, MISSOURI, ONT.

The correct principles which underlie the pruning of fruit trees are probably as imperfectly understood as any other point in fruit-growing. Most people prune in the spring, some through the winter, others in the summer. Now, after carefully observing the effects of pruning done at different seasons, I have come to the conclusion that the best time to prune is in early summer, after the first rush of sap is past, and before the trees have made much growth of new wood.

When trees are pruned in winter, a considerable time must elapse before the wounds made begin to heal over. During this time the combined action of the frost and sun are injurious to the newly-cut and exposed wood and bark, and it will take a longer time to heal over than if the wound was made at the time when the tree was beginning to make new growth.

When trees are pruned in early spring, the sap is then in a thin watery state; it oozes out of the cut, causing premature decay and permanent injury to the tree.

When trees are pruned in early summer, after the rush of thin watery sap is past and the tree has fairly commenced to make a new growth, the wounds will commence at once to heal over. The exposed wood will remain sound for a longer period than if cut in early spring.

Another very important point in early summer pruning is, it does not check the growth of the tree, as when it is done later in the season.

Some advocate pruning in July and August, but I would only prune then in cases where the tree was making too much wood growth, which I wanted to check and throw the tree into a bearing state.

Another very important point in pruning, and yet one which is very much neglected, is to cover the cuts with some substance to protect them from the influence of the weather. Common grafting wax, or a mixture of clay and cow manure, is beneficial; but perhaps the best thing, when it can be got pure and good, is gum shellac dissolved in alcohol to the consistence of paint. A protection of this kind is always beneficial to newly-pruned trees; it neutralizes to a great extent the injurious effects arising from pruning trees at an improper season.

WASH FOR FRUIT TREES.—Keep the trunks and larger limbs of all fruit trees clean and healthy by a wash composed of one part sulphur fine as a powder, two parts soft soap, one part salt, all reduced by water to the consistency of whitewash, and to every bucket or three gallons, add a half pint of coal oil. The latter is considered to be an effectual remedy against the borer, curculio, and a preventive for all insects. Apply with a whitewash brush or mop of rags or sheepskins.

PRUNING.

ITS NATURE AND ITS EFFECT.

The practice of pruning is defined by Webster to be, "To lop or cut off the superfluous branches of trees, to make them bear better fruit or grow higher or to give them a more handsome and regular appearance." The implements used in this work may be of several kinds, to suit the convenience of the operator, as knife or axe or saw or chisel, but all with a view to the same ultimate results. "This," as Shakespeare said of horticulture generally, "is an art that does mend nature." In practice it requires skill and much observation, but the results are usually marked and very positive, sometimes so much as to change the entire future life of the plants. By means of this we have the power not only to mould and form the plant and direct it how it shall grow to serve our purposes, but to regulate the amount and quality of the fruit. By the judicious exercise of this art the tree is made to be our servant, to please and to bless us. Pruning is mainly of two kinds, viz., root pruning and branch pruning, with respect to parts; or winter and summer pruning, with respect to time. It is, however, quite evident that the great burden of pruning, both as to root and branch, must be done in a time quite free from frost. To prune in the winter for wood, and in the summer for fruit, is an old saying that has gained currency, and generally there is much practical truth in it. According to the division of our subject we have first,

ROOT PRUNING.

This mode of pruning consists theoretically in contracting or circumscribing the area of root growth in the soil. The philosophy of the operation is, that whatever threatens to endanger the *life of the plant* will promote fruitfulness. Practically, this is done in

two ways, but the resulting effects of both ways are the same. First, by digging to a certain depth around the tree and at a certain diameter, having the tree for the centre. The practical effect of this is to cut off the fine fibrous or feeding roots and deprive the tree of a very large part of its accustomed nourishment, and this threatens to endanger its life and the result will be fruitfulness. Second, by taking the tree up and removing it to another place the result will be the same. The only material difficulty with these operations is that they must, in many cases, be repeated; yet in many cases, the habit of fruitfulness being commenced, it may in all probability continue. These kinds of pruning, however, are seldom resorted to except in extreme cases, and then only for once or twice. But we are to notice, secondly,

BRANCH PRUNING.

This is by far the most common method of pruning. Theoretically, it consists in lopping off many of the buds and some of the branches, in order to throw greater force of vegetable life into those that are left, and the implements used are those that have already been mentioned. The operation rests upon the philosophy that each tree is furnished with a certain amount of life force to be distributed over its entire surface, and the less the surface the greater the manifestation, and *vice versa*. I think, however, the true philosophy undoubtedly is that the extended leaf surface of the tree during the previous year, has enabled it to store up within itself a very large amount of life force, or food if you please, and that by contracting the demands by means of pruning, the exhibitions are more demonstrative. However this may be, it is most certain that pruning has this effect upon the plant. Branch pruning may result differently, according as it is done when

the leaves are on or when they are off, or, in other words, in summer or winter, as the one is said to be used for increased fruitfulness and the other for increased wood growth.

SUMMER PRUNING

consists in going over the trees or the vines (this is very much used in grape vines), and with the thumb and forefinger pinching out the tip of the young growth. This pruning is sometimes called "pinching," from this circumstance. By this means, trees may be modelled and the growth directed in a most surprising manner. Pruning in winter is much more laborious and complicated, as we have to do with matured buds and branches. It consists in cutting off or out such buds or branches as are deemed unnecessary. For this kind of pruning, it is a good and very safe rule to examine the trees annually and properly direct the growth, so that we may never have to cut out very large branches at any one time. The disastrous effect on the tree is thus reduced to a minimum, and is not so marked as by cutting off large heavy branches at once. The *minutiae* of the business must be learned by practice, under the direction of a good master.

THE OBJECT

of pruning may be said to be twofold: 1st, To regulate or balance the growth; that is by checking luxuriant branches and encouraging weak ones to push forward, and also by encouraging the growth on the sides of the tree that are deficient. 2nd. To form and mature fruit spurs and buds; that is, by checking luxurious wood growth and directing the energies of the tree or vine to the formation of fruit spurs and fruit buds to be developed in other seasons. But the objects of pruning may be, 1st, To change the size and outward form of the tree or vine. To cut into less prescribed limits will have the effect to

render more dense and to sensibly alter the shape. By this means trees and vines can be totally changed from their natural habits, and towering trees be made low and open, spreading trees dense, and the regardless clambering vine be made obedient and domestic. 2nd. To render more enduring of severity in cold climates: This is done only in the summer, and the effect is to more perfectly ripen the wood growth, and render it hard and enduring against severe cold. By this means less hardy trees can be brought through successfully and safely. 3rd. To change the bearing year: This pruning must be very severe, and done only in the summer time. By taking off all the prospective fruit and severely pruning or checking the wood growth, the bearing year may be changed to suit our convenience or profit. 4th. To render fruitful: This is best done in the summer, and is performed, as previously described, by diverting the energies of the tree to the formation of fruit spurs and fruit buds. Root pruning is chiefly used for producing this much-desired object. But 5th, and lastly, the object may be to develop and perfect higher standards of fruit. The philosophy of this proposition is very easily shown, for, granting the tree to have a certain amount of energy to develop samples of fruit, the less the samples the higher the development. This is demonstrated in practice. The results are, increased size, or increased beauty of appearance, or increased flavor, or each and all of these; the prices also are better and the rewards greater.

We have very hurriedly and very imperfectly gone over the most important points connected with the art and practice of pruning. Our object is that it may in some slight degree further the interest of our Canadian Horticulture, a great national interest that we are so intensely concerned about. We

are most heartily glad of the gigantic strides already made in this benevolent art whose object is to beautify and adorn, to elevate and enrich.

B. GOTT,

Arkona Nurseries, Jan. 2nd, 1882.

ROTTING OF TOMATOES.

I have been interested in the correspondence on the rotting of Tomatoes. The extract from the *Gardeners' Chronicle* given in your December number, if carefully looked at, will be found to be no answer to the enquiry made. It is established that as soon as the vitality of organized matter is affected, decay sets in and fungoid growth finds its habitat there. It has been my ambition to be early in Tomatoes, and I have found much disappointment in finding the young fruit withering and spoiled by spotting, with all the appearance of what is called "sun-scalds," though, as the writer asserts, they cannot be that, as the crown of the fruit hangs downwards; nevertheless I opine that the sun has a great deal to do with the spotting, and that the stunted fruit is caused by the drying up of the plant from a want of moisture. Last season, as usual, my vines, while pushing well, and ahead of my fellow-amateur friends, made no sensible progress, as fruit after fruit spotted, dwindled and died; but adjoining my cucumber-frame, which I kept well watered, I noticed that those Tomatoe plants which came in for a share from the garden-hose were entirely free from any blemish, and the plants, moreover, looked healthier. Taking a hint thereby, I regularly watered the lot, and was troubled no more with spotty Tomatoes, the fruit large and handsome and in great abundance.

Having had only one season for experimenting, I do not assert that water

is a cure for spottiness, but the results in my case are somewhat suggestive.

Has anybody else anything to say on the matter which will give light and be of practical service in growing tomatoes.

RICHARD BAIGENT.

THE JEFFERSON GRAPE.

Charles Downing says:—This new, handsome and excellent grape is a cross of the Concord and Iona; it is healthy, very vigorous; wood rather short-jointed; leaves large, thick and downy; very productive; bunch large, shouldered, often double shouldered; compact, berry medium to large, roundish oval; skin rather thick, light red, with a thin, lilac bloom; flesh melting, yet tender, juicy, sweet, slightly vinous, aromatic and rich; the berries adhere strongly to the pannicle, and the fruit maintains its freshness for a long time after being gathered. It is of fine quality, and very promising either for market or home use. It ripens about the time of Concord.

J. J. H. Gregory says:—A rare good grape, the Jefferson. Among the score or more of new grapes before the public, this seedling of Mr. Ricketts stands out so exceptionally good that I have purchased several for my own grounds, and can recommend it to my patrons.

The judges at the Lynchburg, Va., Agricultural Fair in 1880, say:—The Jefferson was one of the very best on exhibition, and for fine eating qualities could not be excelled.

The Editor of the *American Wine and Grape Grower* says:—The Jefferson is one of our best red grapes for table, fully equal to Iona, and more vigorous and very productive, often giving bunches weighing one pound or more.

THE CRESCENT SEEDLING STRAWBERRY.

This is beyond question a wonderful strawberry; its productiveness is astonishing. In size it is medium to large; in color, brilliant scarlet, and does not get dull when in market; in quality, rich, having the peculiar wild flavor. The fruit colors on all sides at once, so that all red berries may be gathered, a quality appreciated by market growers; all berries perfect in form and merchantable. It bears immense crops even in weeds and grass. It is the "iron clad" of the new sorts.

The above is what A. M. Purdy says of this new strawberry, and he has every opportunity for forming a correct opinion.

A correspondent of the *Fruit Recorder*, who resides at Burlington, in the State of Vermont, says of it:

"I fruited some Crescents this year, they are simply immense. Although I had many kinds, none equalled the Crescent. I let them all run together on very rich, moist land (a loam), and they produced more large berries than I ever saw on the same amount of land. I did not get any of the very large berries that some of my neighbors did from the Sharpless. I do not care for a few very large berries, but my Crescents were all large; I might almost say very large—except for some of those rare specimens that are now being produced, they were certainly as large as are required for the table or market, and the quantity was astonishing, and the quality very fine."

J. A. Benedict, in *Chautauqua Farmer*, says:

"In regard to strawberries, I find the Crescent Seedling ahead of anything I have ever grown. Its yield is from a quarter to a third better than the Wilson. Have the Sharpless, but shall

discard it, although its quality is very fine. Find that reports from berries in Michigan give the Crescent Seedling as the equal of the Wilson. The Crescent Seedling when properly picked and packaged can be shipped anywhere. In yield it is superior, and in size it is equal to any. The red raspberry is the one that takes the lead with me."

ENGLISH SPARROWS.

A premium of 6d. per dozen has been placed upon sparrows' heads by the Government of South Australia, acting on the advice of a Commission specially appointed to enquire into the "sparrow question," while the somewhat disproportionate sum of 2s. 6d. per hundred is offered for the tiny pale blue eggs of the bird. The bird, which only a few years ago such efforts were made to acclimatize in Australia, and whose first arrival was hailed with greater enthusiasm than would now be displayed on the landing of a Bend Or, a Duchess, or a prize merino, is now doomed to extermination if that can possibly be achieved. So rapidly have the few pairs which were introduced a few years ago multiplied under the congenial skies and amid the luxuriant vegetation of the Australian Colonies, where there are few or none of the checks on their increase which exist in the Old Country, that the agriculturists complain of the serious injury done by them to their wheat and fruit crops, and have called upon the Government to devise some means of insuring their destruction. The evidence given before the Commission appointed to inquire into the matter affords eloquent examples of the destructiveness of these hard-billed birds. One witness says that in the short space of ten days the sparrows took a ton and a half of grapes; they stripped all the figs off five trees, and kept low 15 acres of

lucerne during summer. Another complains that in the season they took £30 worth of fruit; while a third declares that he sowed peas three times, and each time they were destroyed by sparrows. The fecundity of the sparrow in South Australia is described as astonishing. A few to-day are thousands next season. Its work is done on a scale disheartening to the cultivator, and under conditions he cannot control, for the seed is taken out of the ground, the fruit-bud off the tree, the sprouting vegetable as fast as it grows, and the fruit before it is ripe, and therefore before it can be housed and saved. Neither apricots, cherries, figs, apples, grapes, peaches, plums, pears, nectarines, loquats, olives, wheat, barley, peas, cabbages, cauliflowers, nor seeds nor fruit of any kind are spared by its omnivorous bill; and all means of defence tried against its depredations, whether scarecrows, traps, netting, shooting, or poisoning, are declared to be insufficient to cope with the enemy.

ORANGE CROP OF CALIFORNIA.

The *Press and Horticulturist*, of California, has the following on the coming orange crop in that State: "So far as this State is concerned, the crop will be about as large as last year. The San Gabriel Valley will produce but 35,000 boxes, in place of 60,000 boxes last year, and there will be a similar falling in the old orchards of Los Angeles; but the new orchards of Passadena, Orange, Tustin City, Anaheim and Riverside, will nearly or quite make up the loss of the older orchards. The crop this year will be of a much better quality than last. In 1880-81 the orchards were overloaded, and much of the fruit was consequently inferior. This year the old orchards have a light crop, and therefore the fruit is of a better quality. Again the increase of the crop this year

is in localities where the scale and black fungus have not done so much damage as in the older orchards. A much larger proportion of the fruit will this year come from young trees than it did last year."

NATIVE FRUITS.

A Paper read before the Western New York Horticultural Society at Rochester, January 25th, 1882, by W. C. Barry, Sec. Native Fruit Committee.

APPLES.

The list of valuable apples is now so large that few attempts are made to acquire anything better. Chance seedlings of apparent merit are frequently brought to notice, but when placed beside the older sorts and compared carefully, few are found worthy of introduction. We have several seedlings grafted upon bearing trees, and hoped to obtain fruit of them the past summer, but did not; hence we must defer mention of them till the next annual report. At the West strenuous efforts are being made to obtain sorts which will endure extreme cold. The Russian as well as other hardy sorts are being carefully tested, and ere long we may expect some important developments relative to this class of fruit. The introduction of the *Wealthy* is an important step in that direction. Hardiness and fine quality are combined in this variety, and the new apple has come to be regarded as an acquisition of much value. The *Whitney Crab* fruited with us for the first time the past season, and as regards its quality was an agreeable surprise. The fruit is of medium size, large for a Crab, flesh fine, melting, juicy, and pleasant flavored. It matures in August.

Occident, the new California apple, resembling Yellow Bellflower, and referred to in former reports, is now being disseminated, and we hope it may succeed so well as to merit a permanent position on the select lists.

Sutton Beauty continues to grow in favor, and should it succeed as well generally as it has in New York and Massachusetts, it may with all justice be accorded a high position among our best apples.

Stump, frequently mentioned in the reports of this society, is a beautiful and valuable table apple. It has been on trial long enough to enable us to award it a place among the most desirable fruits.

Magog Red Streak is a hardy variety, of which Dr. Hoskins says: "If it were not for the *Wealthy*, this would stand at the head of our winter apples;" and of

Scott's Winter, another variety, he adds: "This is the apple which well replaces for us the Roxbury Russet of a milder clime."

In our anxiety for novelties, we frequently place too low an estimate upon the older fruits, and the committee feels that a brief reference occasionally to some of these sorts will not be out of place. Some fruits require peculiar care and culture to develop their best qualities, and when a variety of acknowledged merit fails to succeed with us, we should endeavor to find out the cause, and if possible apply a remedy. Soil and climate often exert such a powerful influence over the fruit, that particular sorts cannot be grown in certain localities, even with the best of care. But several sorts fail from utter neglect, or from a lack of the requisite care which such sorts demand. The *Fameuse* apple, than which there is no finer dessert fruit, is very small and scabby in some localities, and in others remarkably fine. During the past summer Mr. J. J. Thomas, chairman of our committee, compared specimens of the new *Kieffer* pear which were grown in Rochester with those from New Jersey, and found the former too

poor to eat, while the latter were of fine quality. Mr. Thomas also cites the case of the *Winter Nelis* pear, which in this vicinity is unquestionably our most valuable winter pear, and in Westchester county it is said to be hardly worth cultivating. Mr. Thomas therefore suggests that it is worth while to try and find out the influences which produce these great differences. The causes of failure of such valuable fruits as the *Winter Nelis* pear and *Fameuse* apple are worth looking into. Intelligent cultivators, such as assemble at our meetings, should give the results of their experience on these points; and if they are aware of any peculiar methods of culture for certain fruits they would do the public a great service by making them known. I am pleased to note that the valuable qualities of the *Fameuse* are becoming appreciated. When in New York a short time ago, I noticed an abundance of fruit upon the stands, and dealers now advertise it as the delicious *Snow Apple*.

The *Jonathan* is another white-fleshed apple which is destined to rank high as a table fruit. It ripens immediately after the *Fameuse*, and is very desirable to succeed it.

Ladies' Sweet is one of those delicate-fleshed apples which deserve the highest esteem. Its flesh is white, tender, rich, and being entirely free from acidity it is easily digested, and as an article of food for dyspeptics would be highly prized if better known.

The *Mother* is a choice winter apple of fine quality, which deserves a higher place than is usually awarded it.

The *Northern Spy* has valuable qualifications as a dessert fruit, which do not seem to be fully appreciated. Succeeding the *Jonathan*, it is in prime condition for eating in mid-winter, and in point of delicacy and delicious flavor

is hardly equalled. Too much praise cannot be bestowed upon this noble fruit. I trust the time is not far distant when consumers will readily pay three times the price for it that they do for *Baldwin* and the like.

Jefferis, from Pennsylvania, is worthy of attention. It is of medium size, skin yellow, splashed with crimson; flesh white, tender, juicy and mild sub-acid. It ripens in September, and is a variety which will always rank high on account of its admirable qualities.

PEARS.

It requires so much time to determine the value of a new fruit, that although several novelties have been on trial for some time, it is not possible yet to give much accurate information concerning their importance for general cultivation. In the localities where they originated they may be very desirable, but when tried elsewhere they are often found to be of little value. At the present time the most prominent aspirants for public favor are *Hoosic*, *Frederick Clapp* and *Kieffer's Hybrid*. The two first are unquestionably of the highest quality, and bid fair to prove acquisitions. The last named has acquired considerable popularity in New Jersey as a market sort. We had fruit of it from our own tree the past summer, and found it too poor to eat. Mr. Thomas compared our specimens with some from New Jersey, and found the latter of good quality. The tree is remarkably vigorous, and has handsome glossy foliage, which readily distinguishes it from all other sorts.

P. Barry, Fox's Seedling, is a remarkable new variety, and particularly valuable, as it extends the season of fine pears into April. The flesh is very juicy, buttery, fine grained, sprightly and rich. It resembles *Buerre d'Anjou* in texture of flesh, and *Winter Nelis* in color of skin and juiciness. Its keep-

ing qualities are really wonderful. Unlike other late winter pears, the flesh retains its freshness, delicacy and juiciness even under unfavorable circumstances, and in April it is just as agreeable to the palate as a fine Winter Nelis in December or January. Now that the *Beurre Easter* can not be ripened successfully, this variety will supplant it.

The Secretary suggests that cultivators should give *Clapp's Favorite* more attention than they have hitherto done. This splendid pear, one of the handsomest of American fruits, is rarely seen, and from all we can learn has never been tested as it ought to have been.

CHERRIES.

The *Windsor*, a new cherry originated with James Dougall, Windsor, Ont., is very promising. It is black, or liver-colored, flesh very firm and of fine quality. It ripens a few days after *Tradescant's*. On account of its lateness and firmness it will undoubtedly be found valuable. We have fruited it upon our grounds several seasons, and esteem it highly. Mr. Dougall says: "The *Windsor* is enormously productive, very hardy, being the only *Bigarreau* or *Heart* cherry, the fruit buds of which were not winter killed last winter on my grounds: even *Dukes* were killed."

PLUMS.

The *Wild Goose* is a pleasant flavored early plum, and is justly entitled to a place among worthy fruits. *Miner*, similar in character, ripens late in September, when plums are scarce, but in quality it is not equal to *Wild Goose*, nevertheless it may have value.

PEACHES.

This is a subject which still possesses more than ordinary interest. The large number of new sorts introduced within the last ten years has drawn peculiar

attention to this fruit. Special interest is taken in the very early sorts, which are now so numerous and so similar as to render it difficult to determine which to keep and which to reject. We have many of the early sorts growing side by side, and though we watched them closely from day to day we have often been puzzled to determine the values of each. It would be tedious to give the results of these tests in detail, so we will at once state the conclusions we reached after careful examinations:

Alexander or *Amsden* are not surpassed in size or earliness; *Alexander* averages larger, but *Amsden* is better flavored. *Waterloo* is higher flavored than either. It may not be any earlier, but its fine quality will render it valuable. *Early Canada* is a close competitor in this class. It ripens with *Alexander*, is not so large, but very handsome, and may part from the stone a little more freely. *Brigg's Red May* is not so large as *Alexander*, and three or four days later. *Governor Garland*, we are informed, ripens several days after *Alexander* and *Amsden*.

The lengthy list of new sorts is becoming gradually reduced, and though the results prove that much labor has been in vain, we have the satisfaction of knowing that the claimants have had a fair trial. We earnestly hope that future introductions may possess qualifications not yet realized. We want early sorts that are free at the stone, and that are less liable to decay than those now known. The following are the latest introductions:

Galand June, *May Beauty* and *Williams' Early Freestone*, said to be two weeks later than *Amsden*, and of better quality.

The following well-known varieties ripen nearly at the same time, but when compared and tested, they show a marked difference in quality.

Conkling is superior to all in flavor. *Foster* comes next, then *Surpasse Melocoton*, *Crawford's Early* and *Richmond* ranking in quality in the order named.

Ward's Late Free is the most delicious late peach in this district.

GRAPES.

Grapes are receiving marked attention from cultivators at the present time. Particular interest is manifested in the new sorts, and all growers are waiting anxiously for the experience of those who have the novelties on trial. We regret that it is not in our power to offer any information about them. It will probably require two or three years more to determine their value. I had the pleasure of testing a new grape which is remarkable for its fine flavor, equalling, if not surpassing, in this respect any variety I know of. The grape I refer to is the *Amber Queen*, raised in Massachusetts. It is of medium size, purple when perfectly ripe, and has a rich, sprightly flavor which is remarkable. The vines which produced the fruit being young, it was not possible to judge fairly of the habit of the plant, or size of cluster. This variety may be regarded as promising.

Burnet, a hybrid between Hartford Prolific and Black Hamburg, and raised by Mr. Dempsey in Canada, deserves notice on account of its fine quality.

Early Victor, a black grape originated by John Burr, of Leavenworth, Kansas, the same gentleman who originated Burr's Seedling Strawberry, is said to be the earliest variety known, and is expected to displace Champion and Hartford Prolific. Reliable grape culturists give us this assurance, so we may look toward this grape with considerable interest. The *Secretary* Grape, one of Mr. Rickett's seedlings, referred to in a former report by the writer of this as a grape of poor quality, pro-

duced some fine flavored fruit the past summer. It ripens very unevenly, however, and the vine is such a poor grower that it cannot become popular. *Highland*, another of Mr. Rickett's grapes, appears to be very late.

Lady Washington we did not see under favorable circumstances, and cannot speak of it intelligently.

Miner's Seedlings fruited with us for the first time, and were quite a disappointment. They all partake of the character of Concord, and are said to have been selected from 1,500 seedlings. One trial is not sufficient to estimate their value, but I fear they are not destined to become popular. The seven white varieties bear a strong resemblance to each other, though of course there are points of difference. *Victoria* is the best. There are two Black ones, *Linden* and *Rockingham*, neither of which show any points of excellence. All resemble Concord in habit of growth and productiveness, and some of the white varieties would have been considered acquisitions had they been disseminated a few years ago before the new White Grapes we now have in the Market.

Lady Charlotte, one of Pringle's hybrid grapes, gives promise of excellence. It is remarkable for its fine flavor. *Vermont Giant*, another of his hybrids, is to all appearances of no value. It is black, very pulpy, and the flavor poor.

I should not fail to refer to three varieties of Rogers' Grapes, the importance of which has been overlooked. They are *Lindley*, *Herbert* and *Gaertner*. *Herbert* is a magnificent black grape, superior in quality to *Wilder* or *Barry*, and the bunch is nearly as large. *Gaertner* is a very large red grape, and so attractive that when exhibited in a collection it is the first to receive notice. *Lindley* we have spoken of

before. It is one of the best red grapes, and deserves to be so regarded. It is singular that these varieties have not attained the distinction which they merit. It shows plainly that we are liable to overlook some important fruits.

Rockland Favorite from Massachusetts resembles the Concord, but does not surpass it in any respect so far as we can see. The *White Ann Arbor*, raised from seed of the Concord, is represented to be of much value. The bunch and berry are described as being large fruit of first quality, and the vine vigorous and free from mildew. *Feemster Favorite* from Indiana is said to excel the Concord in hardiness, and if so, is probably of some value at the west. The bunch is said to be of medium to large size; berry large, green in the shade, and in the sun slightly shaded with salmon.

Wyoming Red or *Wilmington Red*, which originated on the Hudson, being described as a variety which was likely to supersede the Delaware, was watched closely. We may have a spurious sort, for the plant which we have under the name produced a dark red or purple grape; very pulpy, foxy and of inferior quality.

Mr. A. M. Smith, of St. Catharines, writes that several promising seedlings have been raised and are on trial in Canada.

One, an improved Delaware, raised by C. H. Biggar, Drummondville. Another being a fine White Grape, seedling of the Concord, and better flavored.

Our own seedlings, the *Rochester* and *Monroe*, continue to be very satisfactory. Last season when many grapes failed to set their fruit well, owing to unfavorable weather at the blossoming time, these proved remarkable exceptions and produced such an amount of

fruit that we took off fully one-half from the vines when in a green state. The *Rochester*, with its large, shouldered, compact clusters, is a remarkably handsome grape; and the bunches are borne in such abundance that they are very showy and attractive. The vine is vigorous and the foliage very healthy. It has some defects, but where is the grape that has not? The *Rochester* is not destined to be spread broadcast, for it cannot be propagated except with some difficulty. *Monroe* is very early, pleasant flavored, vine very vigorous, hardy, prolific, and the foliage is healthy.

RASPBERRIES.

Public attention seems to be concentrated in the *Cuthbert*. I have not seen enough of it to form an opinion. It is evidently the best flavored of the so-called hardy sorts, and as such is calculated to displace a number of varieties which have been valued for hardiness and shipping qualities. In 1877 I fruited side by side nearly all the raspberries then known, new and old. *Clarke* and *Brinckle's Orange* seemed to be the cream of the collection, so far as the quality of the fruit was concerned. I have fruited the assortment since, and have not changed my opinion. Objections are raised occasionally to the *Clarke*, but for the amateur I think it is unequalled. *Turner* is one of the hardest sorts, and withal of good flavor. *Caroline*, the new yellow Cap, is hardy and very productive, but its quality, we must admit, does not equal our expectations. We were promised a luscious fruit, but with us it proved to be only of fair quality.

Niagara is the name of a raspberry originated and introduced by A. M. Smith, of St. Catharines, Ont. It is said to be a cross between the *Clarke* and *Philadelphia*, and superior to either as a market fruit. Berry large, dark red, shape of *Clarke*, but firmer and

more productive, and fully a week later.

The *Superb*, which originated in New Jersey, was sent out for the first time last autumn. It is described as large, handsome, bright crimson, and having a slightly sub-acid flavor.

Shaffer's Colossal is a new Cap berry, which originated with George Shaffer, in the town of Wheatland, Monroe county, N. Y., in 1869, and is now being disseminated by Mr. Charles A. Green, of Clifton, N. Y. It is said to be the largest raspberry in the world, and the most vigorous in growth of cane, and exceedingly productive.

Mr. Green is also sending out *Lost Rubies*, a red raspberry, described as large, bright red, with considerable bloom, firm and of fine flavor. The plant is said to be very hardy.

Souhegan, a new Black Cap, is described as being early and of fine quality. Well known authorities give it the highest commendation. *Hopkins* is another which originated at the West, and is said to be harder than the Gregg. *Centennial Black*, from the West, is still another which Mr. E. P. Roe recommends highly.

The Black Cap family has been considerably augmented by these accessions, and it will be interesting to compare them.

STRAWBERRIES.

The list of new strawberries is being constantly enlarged, so that our interest in this fruit is not allowed to flag in the least. The *Bidwell* leads the newcomers, and is introduced to notice with the most flattering recommendations. On the Hudson it has done admirably, and from all accounts possesses so many valuable characteristics that we may reasonably expect a great deal from it. The *Manchester*, which originated in New Jersey, follows,

fairly loaded down with commendations from prominent fruit growers. *Jersey Queen*, one of Mr. Durand's seedlings, is also regarded as promising. Mr. Green mentions the *Moonstone* as a variety which ripens late in the season. *New Dominion*, raised by J. H. Biggar, of Drummondville, Canada, is said to resemble Cumberland Triumph. Mr. Beadle says it possesses all the good qualities of that variety, and is at the same time more productive, of somewhat firmer flesh and better flavor. The fruit which we tested the past season was not as good as Cumberland Triumph. *Early Canada* was originated by A. M. Smith, of St. Catharines, and is said to resemble Wilson strongly, but it ripens a week earlier.

We tested fifteen or eighteen new sorts last summer, but were not favorably impressed with any of them. Possibly another season's trial will enable us to form a better opinion of them.

I compared *Glendale* carefully with *Kentucky*, and came to the conclusion that the latter was the more valuable.

CURRENTS.

Fay's Prolific is now in the market, and we hope to give it a trial soon. Mr. Smith says *Lee's Prolific* does not show any points of superiority over the *Black Naples*.

We have endeavored in this report to refer to all the most prominent novelties now under cultivation. You will, I am sure, agree with me that we are making progress; and if the same interest and energy be evinced in the future as in the past, we may look for great advances in fruit culture. By hybridization and crossing the most wonderful results may be accomplished. There is in fact no limit to the novelties we may produce. But let our efforts be directed in such a way as to produce the most useful results.

FARMERS THAT DISLIKE FRUIT GROWING.

The Chicago *Herald* thus speaks to those farmers who neglect fruit planting:

"While all parts of our country are adapted to the cultivation of excellent fruits of various sorts, and while all locations will produce a fair variety, it is a singular fact that many farmers never undertake to produce even the very moderate amount which would be used by their own families. The writer of this went to his farm some ten years ago. About the first serious work that engaged his attention was the planting of fruit, of the sorts that would bring a return—as currants, gooseberries, raspberries, strawberries and apples—of the latter several hardy standard sorts, as well as several varieties of crabs. It really seems now that it was but a very short time until we not only had a large supply for our own use, but a surplus began to come along, which in our own section commanded a ready sale and good prices. Our raspberries and currants are a regular mine of luxury during the summer heat, when one so appreciates such cooling and healthful and nutritious articles of diet. The currants are specially craved during haying and harvesting, and it would be a deprivation indeed to go without them!

"But our nearest neighbor, though he had ten years the start of us, has never yet raised an apple, and not a single berry or currant! He has once in a while set a few apple trees, but he has left the pruning to his cattle and colts, and they have done the work far too well! He is very glad about these days to send 'the children' over to our orchard to pick up the fruit which drops off, from which 'the old lady' elaborates a little 'applesass!' But such a thing as a dish of berries and choice ripe

currants is very seldom, if ever, seen on his table. He has never set so much as a pie-plant, and if even this coarse substitute for fruit is ever used in his house, it has been begged from some more thoughtful and thrifty neighbor.

"Such neglect as this is without any excuse whatever. What motive, or lack of motive, it originates from one can hardly guess. Whether these procrastinating people are too stingy to make the small outlay required at the start, or are afflicted with downright laziness, or a combination of both these ailments, would be a difficult matter to establish. But the fact exists, that such utterly shiftless people do abound in every community, and that they are content to live year after year upon 'hog and hominy,' when the soil at their very doors would supply them with the choicest fruits that can be grown in the temperate zone! Every variety—grapes, strawberries, raspberries, blackberries, currants and gooseberries—can be produced in any quantities. Once established, their after care is very easy and simple, and they will load the farmer's table with choice, delicious and healthful food all the year round.

"Our advice to every farmer is simply this—make it a point to produce fruit enough to supply your own table all the year round. If you are going to open a new farm, do less of the hard work which brings only a small return, and plant fruit. If you cannot do all in one season, do a little each year, until you are quite sure that you have sufficient for a home supply. Not only will it pay you as we have set forth above, but the thought, investigation and study which its culture requires is a most excellent discipline for the mind—almost 'a liberal education.' There is no reason why every farmer should not be, in a moderate and modest way, a

horticulturist, capable of not only supplying a choice variety of fruit for his own table, but skilled in adorning his home in a way to make it a pleasant abiding place for all who are sheltered under its roof."

THE QUINCE.

Since the canning of fruit has become so simple, cheap, and easy, the question naturally arises, what shall we use for a family supply? In answer, we reply that in our own family the Peach and Quince hold important places, and are regarded as indispensable. We feel very much in regard to the Quince as the old farmer did about his boiled Indian pudding—"wanted three hundred and sixty-five in a year." Few will ever tire of good canned Quince; hence its culture is of importance.

Varieties.—The *Apple* or *Orange* Quince is the best in texture and quality, but the *Pear* is a healthier grower and more productive, ripening also later. The new variety, *Champion*, is more vigorous and productive than either, and is also an excellent keeper. A good plantation of Quinces should embrace all three varieties.

Soil and Location.—Almost any good soil will produce Quinces; a dry, sandy soil is the least favorable, a strong, moist loam, well drained, the best.

A peaty soil, on the margin of a free-running stream, almost always produces good Quinces in abundance.

Culture.—Shallow culture only should be given, as the Quince throws its roots near the surface. The best Quince orchard I have seen is where the owner resorts to mulching rather than culture. Sufficient manure should be applied annually.

Enemies.—The borer, the same which attacks the Apple trees, is the worst enemy of the Quince. The best remedy

is a pint of soft soap mixed with one gallon of lime wash (common white-wash), which, when thoroughly applied from the base of the tree up eighteen inches, early in May each year, will save your trees from subsequent attacks of the borer.

Continual intelligent care will be followed by success in nine cases out of ten.—*American Garden.*

ROOT PRUNING.

The experiments were made on the apple and pear. A vigorous apple tree, eight or ten years old, which had scarcely made any fruit buds, has done best when about half the roots were cut in one season, and half three years later, by going half way around on opposite sides in one year and finishing at the next pruning—working two feet underneath to sever downward roots. It has always answered well, also, to cut from such trees all the larger and longer roots about two and a half feet from the stem, leaving the smaller and weaker ones longer, and going half way around, as already stated. The operation was repeated three or four years later by extending the cut circle a foot or two further away from the tree. By this operation unproductive fruit trees became thickly studded with fruit spurs, and afterwards bore profusely. This shortening of the roots has been continued in these experiments for twenty years with much success, the circle of roots remaining greatly circumscribed. The best time for the work has been found to be in the latter part of August and beginning of September, when growth has nearly ceased, and while the leaves are yet on the trees, causing greater increase of bloom buds the following year than when performed after the leaves have fallen.—*London Garden.*

THE ONION SMUT.

The Onion is one of the leading crops in many localities in the eastern states, and in some of them the culture of this vegetable has, within the last ten years, greatly diminished, and has even been abandoned because of the destructive prevalence of the Onion Smut. This pest is closely related to the Corn Smut, and makes its appearance upon the Onions while they are quite small. The smut plant in its early stages of growth consists of a multitude of small filaments or threads collected in knobby masses within the tissue of the Onion bulb and narrow parts of the leaves just above the bulb. A little later the epidermis or skin of the leaves bursts open and a vast number of dark brown particles of dust are found, which are the spores of the fungus. The Onion is still small when the spores are produced, and it seldom continues to grow.

It is thought by those who have investigated the trouble that the smut has come from the wild Onion or Garlic, and this suggests as a precaution that all of the wild Onions should be destroyed. When the smut plant has perfected itself and ripened its myriads of spores, the soil becomes more or less charged with these seeds, and spores are seeds as far as their functions are concerned, of a destructive pest, and give truth to the expression often heard among afflicted Onion growers, that "the disease is in the ground." A remedy is always the desired thing when there is any disorder. If the spores have already infested the ground they must be destroyed. The best way to do this is to cease growing Onions on that land for a term of years sufficient to exhaust the vitality of the dormant smut spores. Put other crops on the land, and after about six years it will be safe to try Onions again.

The Onion smut is still somewhat

limited in its range and every precaution should be taken to keep the pest from getting widespread. Great care should be exercised in not taking seed from a smutty locality. The spores being very small they may cling to the rough surface of the Onion seed and be sown with it. As a precaution soak the seed, that the water may remove, as it will, many of the adhering spores. Onions grown from sets are not so much troubled with the smut as those from the seed. It is probable that the tender substance of the young seedling offers much more favorable conditions for a successful growth. It is a fact of general application that the stronger (and it would seem as if even young Onions were strong enough) the plant, the more vigorous its growth the less liable is it to attacks from fungi.—DR. BYRON D. HALSTED, in *American Gardener*.

WASH FOR FRUIT TREES.

The object in applying a wash to trees is not so much to remove the rough and scaly outer bark as to destroy the parasitic plants and insects which adhere to the surface of the bark and sap the vitality of the trees by a constant drain upon the circulating current. One form of wash is made by adding one pound of whale oil soap to three gallons of warm water, stirring well and applying with a stiff broom brush. The trunk should be rubbed thoroughly and hard to remove as much as possible of loose bark, that the liquid may reach every part of the surface. Another good wash is a weak lyè from wood ashes. A third wash is made by adding two quarts of soft water to one gallon of common soft soap. Place these in a vessel over the fire, and when warm the soap and water are readily combined by stirring, and should be applied in the same manner as the whale oil application. The best results are obtained by

washing the trees about three times during the season, applying the first in March or April, the second in June and the last in August. The insects as well as moss will be effectually removed, leaving the bark in a fine healthy condition.—*Western Farmer*.

CARBOLIC SOAP FOR INSECTS.

I am experimenting with Buchan's Carbolic Soap, as a preventive for injurious insects, and am so well pleased with the result thus far, that I wish to stimulate other horticulturists to try some experiment with the article.

For cut worms, I made the soap suds pretty strong—two gallons of water to half a pound of soap, and with it saturated a bushel of sawdust; then placed a little around the stem of each cabbage and tomato plant,—using a handful to eight or ten plants—adding a little more after two or three days when the odor seemed gone. This was completely successful in ground where the worms were quite plenty, and where plants not protected were speedily cut off by them. It is the cheapest and most easily applied remedy that I have yet seen.

For striped bugs on melons and cucumber vines, I find the same method of using the soap effective, if the sawdust is sprinkled on the plants every day,—which is very little trouble,—but I am now trying wetting the plants directly with weak suds made of ten gallons of water to half a pound of the soap, and I think this will prove the best.

For aphids or plant lice on cherry trees or the like, a sprinkling or two with the suds, by means of a sponge, or bending the shoots so as to dip them into a pail or basin, is speedy death to them. Care must be had not to have the suds too strong when applied to tender plants

or young shoots of trees; experiments are needed for this point.—*Fruit Recorder*.

PALESTINE OF TO-DAY.

Nothing can well exceed the desolateness of much of the country. Treeless it is for twenty or thirty miles together. Forests which did exist thirty years ago—for instance, on Mount Carmel and Mount Tabor—fast disappearing; rich plains of the finest garden soil asking to be cultivated, at best but scratched up a few inches deep in patches, with no hedges or boundaries; mountain terraces, naturally or artificially formed, ready to be planted with vines as the German colony is doing at the foot of Mount Carmel, the villages nothing but mud huts, dust, dirt and squalor, the inhabitants with scarce clothes enough for decency, their houses ovens; large tracts without a horse or cow, sheep or dog; no pretence at roads, except from Jaffa to Jerusalem, and this like a cart road over a plowed field.

Everything is taxed; every fruit tree, so none now are planted; every cow or horse, etc.; every vegetable sold out of a private garden. Every eighth egg is not taxed, but taken by the government. In some places the taxes of the district are sold to the highest bidder. Nothing like a small farm-house is to be found far or near. If there were, the owner is liable to have soldiers or revenue officers quartered upon him, to be boarded and lodged at his expense. The towns are filthy in the extreme, none more so than Jerusalem itself.

This is a picture I believe, in no way over drawn of that land which was once "flowing with milk and honey." What might it not become again with fair usage and good government? But there is no hope for Palestine while it remains in the hands of its present rulers.—*Cor. London Times*.

BOOK NOTICES.

We have received from the publishers a copy of a new book on Roses, by H. B. Ellwanger, of Mount Hope Nurseries, Rochester, N. Y.

It contains 300 pages of most useful information necessary to the successful cultivation of the Rose, the results of the experience and observation of many years of one who is himself an enthusiastic and most successful cultivator. It treats in a full and most comprehensive manner of soil, planting, pruning, manure, insects, diseases, and the varieties best adapted for particular purposes, as bedding and forcing, and those for bleak and very cold situations, with an exhaustive catalogue of varieties now in general cultivation.

Much pains has been taken with the classification, so that valuable distinctive features may be preserved and yet simplicity maintained, so as not to confuse and perplex.

The book is issued in very handsome style, by Dodd, Mead & Co., New York, 16 mo. cloth, \$1.25.

HUBBARD'S NEWSPAPER AND BANK
DIRECTORY OF THE WORLD.

This most comprehensive work of 2,591 pages is issued in two Volumes, Vol. I. being devoted to America, Vol. II. to Foreign Countries.

It contains lists of all the American newspapers and of the British Provinces, maps of the World, a fine map of North America, much interesting and instructive reading matter, *fac-similes* of English, French, Spanish, Egyptian, South American and Australian newspapers, articles descriptive of the several States and Territories of the United States; also a series of Gazetteer articles, descriptive of all foreign countries, and maps of all foreign nations. There is also a list of the responsible Banks of the World, embracing about twenty thousand Banks.

The whole work is a most astonishing compendium of valuable information, which should be in the hand of every business man.

Published by H. P. Hubbard, New Haven, Conn. Price \$10.

GRAFTING THE GRAPE.

Though I have practiced grape-grafting for thirty years, and was one of the first to make it practicable, I am studying and experimenting with the subject yet. After testing with the utmost care, at various seasons, with apparently good wood, upon good stock, my success has been diverse, and I can fix on no particular season as positively better than another, yet my choice now is just before the buds begin to swell. If the stump at the cut bleeds, it will do no harm. On young vines, with a smooth place to operate, there need be but little failure; but with old stocks, the rough knotty butt is a serious drawback; but if the vine is laid down, say a foot deep, three feet or more distant from the stock, and then grafted on a smooth place, held in position with a peg, the earth pressed firmly around both stock and graft, with one bud of graft only above the surface, the chances of success are much better than when worked at the root of the vine; but in this case the shoots must be rubbed off as fast as they shoot up around the base of the stock. If the graft takes, the vine laid down will, by taking root, greatly help its growth, and after the second season the young plant can thrive on its own roots, and the old stock may be grubbed out.

The grafting of the grape on pieces of grape roots, in the house, in winter, with those that will not succeed from cuttings, is a simple and successful method, of which I will send you an illustration if desirable.—SAMUEL MILLER, in the *Fruit Grower*.

THE BRIGHT FLOWERS.

Oh, they look upward in every place,
 Through this beautiful world of ours,
 And dear as a smile on an old friend's face
 Is the smile of the bright sweet flowers.
 They tell us of wanderings by woods and streams,
 They tell us of lanes and trees;
 But the children of showers and sunny beams
 Have lovelier tales than these—
 These sweet bright flowers.

They tell of a season when men were not,
 When earth was by angels trod,
 And leaves and flowers in every spot
 Burst forth at the call of God;
 When spirits, singing their songs at even,
 Wandered by wood and glade,
 And the Lord looked down from the highest heaven,
 And blessed what he had made—
 These bright, bright flowers

That blessing remaineth upon them still,
 Though often the storm-cloud lowers,
 And frequent tempests may soil and chill
 The gayest of earth's fair flowers.
 When Sin and Death, with their sister Grief,
 Made a home in the hearts of men,
 The blessing of God in each tender leaf
 Preserved in their beauty then
 These sweet bright flowers.

The lily is lovely as when it slept
 On the waters of Eden's lake,
 The woodbine breathes sweetly as when it crept
 In Eden from brake to brake;
 They were left as a proof of the loveliness
 Of Adam and Eve's first home;
 They are here as types of the joys that bless
 The just in the world to come—
 These bright, bright flowers.

DOMESTIC RECIPES.

NUT CAKE.—Ingredients: Sugar, two cups; butter, one cup; flour, three cups; water, one cup; eggs, four; soda, one teaspoonful; cream tartar, two teaspoonsful; hickory nut kernels, two cups. Mix the ingredients, adding the nut kernels last.

LEMON DUMPLINGS.—Ingredients: Suet, four ounces; moist sugar, four ounces; bread crumbs, one-half pound; lemon, one. Grate the rind of the lemon, squeeze out the juice, mix all the ingredients. Put in buttered tea cups and boil three quarters of an hour.

APPLE FRITTERS.—Pare and slice in large round slices some fine tart apples; sprinkle the slices with sugar, and squeeze over them the juice of a lemon, and let stand a few hours. Make a batter of three eggs and two tablespoonsful of sweet milk, with flour enough for a thin batter, in which dip the slices of apple, and fry

separately in butter or lard. When done sprinkle with powdered sugar.—AARON'S *Wife in Prairie Farmer*.

TO PICKLE SWEET CORN.—Cut the corn rows from the cob; to every heaping four quarts you mix a small teacup of fine salt; pack in jars and set in cool place. It will soon form a thick, leathery skin over the top; let that be until wanted for use; when you take out to soak, wash it, and then soak in cold water for a few hours; it will retain its flavor far better than either dried or canned, and is far less trouble to care for than to dry, and is sure to keep well until spring.

TO PICKLE PEACHES, PLUMS AND PEARS.—Take of ripe peaches, plums, pears, or apples; seven pounds of sugar, one quart of vinegar, and one ounce of mixed spices; put the sugar and vinegar together, and pour over the fruit, allowing it to stand until the next morning, when repeat this process, straining the juice of the fruit, letting it come to the boil, and continue to do so for four mornings; then add spices, and put all over the fire and cook very slowly until they look rich and clear. Pears should be boiled in water until you can run a broom whisk through them. Quinces are also delicious when preserved in this manner.

THE SCHIZANTHUS.—The Schizanthus is a genus of beautiful flowers, adapted either for the open ground or conservatory. The name signifies cut-flower. All the species of this genus we believe, are natives of Chili, and were introduced into Europe between 1822 and 1831, seeds of *S. pinnatus* having been carried to England in the former year, and the more beautiful species, *S. retusus*, at the latter date. If seeds are sown in a hot-bed or cold-frame, and plants are put out in a warm, light soil, they will sometimes grow three or four feet in height, and will give abundance of flowers during the middle of the summer and autumn. We have also succeeded very well by sowing the seeds in the open ground in May, but the soil must be mellow and warm. The branches are slender and require the support of a light trellis, and they are broken very easily by the wind, so that a sheltered position is desirable.

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TULIPS.

These beautiful flowering bulbs can be purchased at such moderate prices, and be grown so easily, that it is a wonder that every lover of flowers does not have a large bed of them. Their colors are so varied and brilliant that they make a most gorgeous display when planted in masses; and they are so hardy and grow so readily in any good garden soil that there is not the slightest difficulty in their cultivation.

The earliest varieties will usually be in bloom in the last days of April, and by planting the sorts that come later, a succession of bloom can be kept up until the first of June. The Duc Van Thol tulips (Fig. 1), are the first to bloom.



FIG. 1.—DUC VAN THOL TULIP.

These are both single and double; the double are all red with a yellow border,

the single are of various colors—scarlet, crimson, yellow, white, &c. These all grow about six inches in height, and are very showy. After these come the variety known as the Tournesol (Fig. 2),



FIG. 2.—DOUBLE TULIP OR TOURNESOL.

with very large double flowers, yellow or orange and red, which continue for a long time without fading. These are followed by Single Early Tulips (Fig. 3), of many colors, as red, crimson, violet, purple, yellow; also many of them very beautifully striped, and others edged with white or yellow or red.

Flowering as they do so early in the season, they continue longer than the



FIG. 3.—SINGLE EARLY TULIP.

late flowering and make a splendid display.

The later Tulips (Fig. 4), grow taller than the earlier sorts, and are great



FIG. 4.—LATE SHOW TULIP.

favorites with all lovers of this showy flower. They have been divided in sections known as Bizarres, Byblooms and Roses. The Bizarres have a yellow

ground color, which is broken with any other color, as purple or red; the Byblooms have the ground color white, broken with purple; and the Roses have also a white ground color, broken with cherry, crimson, or pink. Numerous rules are laid down for judging these tulips, and the "points" of the flower defined with most minute exactness; but as it is not probable that the readers of the *Horticulturist* will be growing them for exhibition purposes, we shall not weary them with these rules.

In planting tulips it is necessary to choose well-drained soil, as standing water is very injurious to them. Autumn is the proper season for planting them, say the month of October. They should be covered to the depth of about three inches, in soil that is sufficiently rich to yield a good crop of potatoes. An occasional stirring of the surface and eradication of weeds is all the further cultivation required. Most writers on tulips insist upon the necessity of taking up the bulbs as soon as the leaves have withered, and keeping them in a cool, dry place until the planting season. It is true that if this is not done the more delicate varieties will die out after a while, and the stronger will lose their variegation and revert to the old red color. But after all, one gets tired of the same thing year after year, and when the tulip bed begins to run out, there is a pleasure in procuring a new lot to supply their places, and enjoyment in marking the changes that further cultivation by those who devote themselves to the

raising of new tulips may have produced.

There is also a variety known as the Parrot Tulip (Fig. 5), having long, loose,



FIG. 5.—PARROT TULIP.

fringed petals, the most of them having three or four colors, yellow, crimson, orange and green intermingled, the yellow color, however, usually predominating. They are very brilliant and showy, and will be particularly interesting to those who are not familiar with their peculiar form.

The Tulip holds a conspicuous position in the history of commercial speculations. It hardly seems possible that men, business men, shrewd and calculating, should have been so beside themselves as to value a single tulip bulb at one and two thousand dollars. A Harlem merchant paid half his fortune for a tulip that he might keep it in his garden for the admiration of his visitors. In 1635 the tulip mania had seized upon all classes, and speculation in tulip bulbs took the place of ordinary

business. Upwards of \$46,500 was paid for forty bulbs, and a sailor is said to have eaten a tulip bulb, mistaking it for an onion, the value of which would have furnished a princely dinner party.

DRIED FOODS.

At present we export to Europe about 6,000,000 pounds of evaporated apples. The process is extremely simple. The fruit is "cored" and sliced into pieces one-sixteenth of an inch in thickness; it is then exposed to sulphur fumes, which arrest all fermentation, and then to a dry hot blast of air, which reduces it to about half its original weight. The sulphur fumigation prevents the fruit from becoming dark, and after drying it is almost as white as when first cut. Simple as is this process, it costs about twice as much as drying the fruit in the sun, but such is the saving in weight and flavor that it is preferred, and evaporated apples sell to day in the European markets for fifteen cents a pound.

An old produce dealer interested in the European export trade told an *Evening Post* reporter that in view of the astounding magnitude of the export trade in food products, it would not be surprising to hear of attempts at compressing or drying every product of the country. The same process as that applied to apples has been used with some success with peaches, and some berries that can be grown cheaply, and as the export of dried food products increases, the import is constantly decreasing. The raisins from California promise to drive all foreign raisins out of our markets. There are vineyards of hundreds of acres in Placer, El Dorado, Los Angeles, San Diego, and other counties, given up to growing and drying grapes, partly by evaporation and partly by sun heat.

CORRESPONDENCE.

THE GOOSEBERRY.

The Gooseberry is a fruit which seems rather at a disadvantage in Ontario, as the standard English sorts do not succeed, both from their liability to mildew and because their mode of growth is unsuited to the climate.

Only two kinds are considered reliable—the Downing and the Houghton, and these in quality, growth and size of fruit are but middling. From their appearance I should suppose these to be hybrids, and that the small, smooth, swamp berry is the female parent.

If this be correct, it is quite possible and probable that we may yet have a considerable number of new sorts, and of a much better quality; but the matter must be taken up without loss of time, or it may be too late.

It has often been said that this was a land of wild grapes, but when first settled it was even more a country of wild gooseberries, and the varieties were endless; red, green, rusty-purple, and even blue; small, middling and large; prickly, spiny, hairy and smooth.

Some of the two last are, or were, of very fine flavour, almost equalling the finest English kind, which is also hairy.

In many old settled and improved districts the native gooseberry is practically extinct, and ere the march of civilization completely annihilates it, we need men of observation, practical and scientific knowledge, who have taste and leisure, to experiment and improve this fruit. Seedlings with the native habit of growth, and the fruit more like the English in size, would make a name and a profit for the successful originator. But even if good hybrids cannot be produced, we need not confine ourselves to two sorts, nor to twenty.

When this district was new, I was struck with the superior habit of growth and the efficient mode of renewal of the native bushes in the woods.

On trying the fruit I found the quality not only bad and indifferent, but also good, and used to mark plants of superior flavour when ripe that I might transplant in the fall.

In this way I selected and removed three or four dozen bushes, which filled a considerable plot of ground when placed at a due distance from each other, intending to prune, mulch and manure them, but owing to various untoward circumstances they were quite neglected.

Notwithstanding want of care they have borne for more than twenty-five years, and for pies, preserves and ripe use, we think them better, and certainly more reliable, than the two standard sorts.

Several years ago I saved and sowed seed from the best and largest, but did not find the fruit of the seedlings equal to the parents. Cultivation will not improve them.

They differ from the English sorts in having a disinclination to take root from cuttings, but any sucker or offshoot with the least portion of root will grow.

Partial shade is desirable, as in some kinds the fruit drops considerably in arid situations.

C. ORILLIA.

REPORT OF FRUIT TREES.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

DEAR SIR,—I am a little late with my report for 1881. The winter of 1880 and '81 was a very hard one here. My Ontario apple tree was winter killed dead to the snow line. I had a graft of the same variety, which was grafted into a seedling stalk; it was also killed.

This is sufficient proof that this variety will be too tender for Eastern Ontario. I had two trees Beauty of Kent, one Fall Pippin, one Sweet Bough, bearing trees, all winter killed; also a row of young trees of Gravenstein, every one killed. My Glass Seedling plum survived; the fruit buds were all killed, but the tree was not injured. I had a fine McLaughlin plum tree killed. My Flemish Beauty and Clapp's Favorite pear trees came through the winter uninjured, only the fruit buds were killed. All the other varieties of pear trees that I had were winter killed. The Swayzie Pommie Grise and Grime's Golden apple trees are growing fine; they are hardy. Grime's Golden has borne some fruit for three years. My Burnet grape made a large growth last year, but bore no fruit, which disappointed me very much. I think I over-manured it; it came into blossom the latter part of July, and the blossoms all fell off. Do you think that over-manuring would make it act in this way? All my other varieties of grapes bore heavy, but none got any manure. I removed the surface earth from my Burnet, and put a heavy coat of rotten manure over the roots: then put the earth back again over the manure. I have heard that grapes will stand any amount of fertilizing, but I think that I overdid it. I find the Burnet needs but very little winter protection.

The cold days for the Winter are as follows: November, 4 days thermometer below zero, the lowest being 11 degrees; December, 1 day 10 below zero; January, 17 days thermometer below zero, the lowest being 24—it went to this figure three times; February, 10 days below zero, the lowest 25 degrees. The average cold for 11 days, taking the last four days of January and the first seven days of February, was $12\frac{1}{2}$ degrees below zero.

The ground was well covered with snow the whole winter. Yours respectfully,
A. BRIDGE.

West Brook, near Kingston, March, 1882.

FRUITS IN ALGOMA.

MR. EDITOR,—I have been on the point of writing to you for some time, but have not, as I have been trying to promote the interest of our Association; but as this is a newly settled part of the country, and some have not enough land under cultivation to allow them to set apart an orchard, so they say they would rather wait a while longer, and see how the trees and vines grow and stand the winters before purchasing for themselves. We have quite a variety of wild fruits, such as strawberries, raspberries, gooseberries, cranberries, and I have heard of a few wild grapes, but as I have not seen any, I cannot speak about them. There are also some very old apple trees on this island which bear fruit most seasons, but seldom have a chance to ripen, as the Indian and half-breed pick them before they ripen. One of my neighbours ripened a few bunches of Concord grapes last season. I have four Concord and four Isabella vines, but they are not bearing yet. I expect they will have some fruit this summer. All small fruits will do well here, and I think that if we can get the most hardy that will ripen early, that we can grow apples. I don't see why we should not, as our climate is no worse than that of Collingwood or Goderich, and they grow fruit in these townships. Also at Sault St. Mary's, I am told, they have fine orchards, and ripen their fruit. Most of the tops of my apple, pear, plum and cherry trees got killed last winter, but sprouted out of the stems or roots. I will still protect them, and see if I can make anything out of them. I intend trying some

Black Walnut and Chestnut trees this next spring, unless you think we are too far north to admit of their growing. If you think they would not do well here, I wish you would make a note of it in next number. I read the articles in one of the back numbers, and don't understand if that is the only distance north that such trees will grow. Of course we have no such trees here, and I would like to plant a few to test them for a winter or two. I cannot think of any more at present to mention, so hoping you will excuse this from one who is not accustomed to write long letters,

I remain, yours respectfully,

JAS. C. COOPER.

Note.—It is not probable that the Sweet Chestnut would endure the climate. The Black Walnut might.

ENGLISH SPARROWS.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

SIR,—In your March number there was a communication from Mr. Newhall, referring to an article from an Australian paper respecting the destructiveness of the English sparrow, which article I had previously read.

As Mr. Newhall gave no particulars of his own observation, I doubted the facts as stated, as my garden and small plum orchard is constantly filled with sparrows, they having made it a roosting place all winter, and I had never noticed any harm they had done to fruit or fruit buds.

I wrote a short article to send you to that effect, but before sending it I happened to notice a pear tree in my garden with a dozen of sparrows on it busy pecking at the fruit buds which were then just beginning to expand, and going to examine them closely I found they were nibbling at the incipient stalks of the blossoms. Think-

ing they might be after insects, I concluded to watch them more carefully before writing you; but on going into my plum yard adjoining, I found there was hardly a fruit bud left on several hundred bearing plum trees, the places where the fruit buds had been picked out being quite distinct all over the trees. They had not then touched any cherry or peach buds, but on Saturday last I discovered dozens of sparrows on my specimen tree of the new "Windsor cherry" seedling, which stands at my kitchen door, and which was, as usual, perfectly covered with an enormous show of blossoms. On examining closely, standing under the tree and looking up, I saw they were all busy eating the unopened fruit blossoms, and looking under the tree found the ground covered with the debris of the buds dropped in eating them. Since then they have been busy on all my cherry trees, more than half of the unopened blossoms being already gone. To-day I found them eating the peach blossoms for the first time, and doubt not but all will be destroyed before the week is over, as there are hundreds of them busy at work all the time.

It is evident that strong measures must be taken to prevent the spread of the sparrow, and to destroy them where they are already a nuisance, as they are here. As long as they were few in numbers they did apparently little or no injury to the trees or fruit, living on what they could pick up out of the horse droppings on the streets and any spilt grain about the railway depot and elsewhere. But this spring there has been little or no movement of grain by rail, and the birds have increased so much that they can't make a living off the horse droppings, and have been supplementing it with fruit buds.

The benefit they were to do in destruction of insects has been greatly

exaggerated. It is only when they have young that they hunt for them. I saw a female to-day busy catching spiders from a vine trained against a wall, while several hundred others were eating fruit buds. One chipping sparrow is worth twenty English for destroying insects, while the English drives them away.

Law or no law, I will try and destroy as many sparrows as I can in the most wholesale manner possible.

Yours truly,

JAMES DOUGALL.

Windsor Nurseries, April, 1882.

"LOST RUBIES."

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

DEAR SIR,—Allow me to call the attention of your correspondent, Mr. J. C. Robinson, of Owen Sound, to an unfortunate slip in his note on page 95 of your April number.

Mr. Robinson says, "No one can convince me that 'Lost Rubies' is akin to foreign sorts; *the leaf and cane are as plainly native as our Canada thistle.*"

Mr. Robinson will be perhaps mortified to learn that Canada cannot claim the honour of being the mother country of this prolific thistle. Had he seen as many acres of it as I have seen in the old country, he would know that, like many others of our plant and insect pests, it has been introduced—like the white man himself. The simile was unfortunate for his argument.

While I am writing, I should like to mention that the name of the manufacturer of Buhach, on page 76, should be Mr. Milco, not Miles. This correction may prevent the miscarriage of letters.

E. W. CLAYPOLE.

New Bloomfield, Perry Co., Pa.

GRAPE VINES AT BALTIMORE.

I am well pleased with the *Canadian Horticulturist*. It was a well-spent dollar. The report is well worth the amount. I have over nine hundred Grape Vines set out at present; and I am experimenting and trying to improve or invent new or better systems of training, that will harmonize better with the natural growth of the vine, and that can be successfully and economically laid down and covered for winter, which is a necessity in this country.

T. A. CHAPMAN.

CANADIAN APPLES IN THE ENGLISH MARKET.

The arrivals of Canadian apples at the port of Liverpool last year were something over 200,000 barrels, but owing to the shortness of the crop in both the United States and Canada these numbers will certainly not be reached by the imports from the two countries during the present (1881) season. In fact, the shipments to Liverpool within the last three months, as compared with those in the corresponding period of last year, show a decrease of nearly 30,000 barrels. With the view of giving the trade an opportunity of judging for themselves as to the most valuable class of apples to be imported to this country, Mr. Smythe, the Canadian Government Agent at London, Ontario, has forwarded a consignment of some hundred different varieties of Canadian apples, properly classified, which were supplied by the leading growers in his district. These are on exhibition at Liverpool. It is expected that the next Allan steamship will bring from Canada a further supply, which will be exhibited at the leading pomocultural shows in Great Britain. By this means it is intended to promote the interests of this important branch of the Canadian export trade.—*The Grocer*.

THE UTILITY AND BEAUTY OF TREES.

Address of the Hon. George B. Loring, United States Commissioner of Agriculture, delivered before the American Forestry Congress, at their recent meeting in Cincinnati, Ohio.

Gentlemen,—I have accepted your invitation to be present on this occasion and to preside over your deliberations, not because I feel competent to instruct in the art of forestry, but in order that I might assure you of the sympathy of the Agricultural Department of the Government, and of my own high estimate of the value of your work. The question of forestry is one of the most intricate and difficult of all the agricultural problems which come before us.

That our forests are wasted by reckless extravagance and by uncontrollable conflagrations; that they are diminishing before the immense demands upon their products, we all know. Their importance as a climatic influence is conceded. The profit of tree-growing on wisely selected lands is acknowledged. But the methods by which our forests can be restored and preserved still puzzle the statesman and the cultivator alike. The nature of property in timber lands as adjusted for the State and the individual, in all those countries where the forests have attracted the special attention of the Government, particularly in the Old World, has so much of exclusiveness and reservation for the gratification of personal desires, that we can derive but little benefit from its study. The rights and powers and duties of State and Federal legislation, as regards our forests, require the most careful and ingenious consideration. We learn from the statistical returns the vast value of forest products to our commerce, to our domestic manufactures, to our internal trade. And by constant investigation we are ascertaining the best systems of tree-planting, and of cultivating specific wood crops in

favorable localities. You will pardon me, therefore, while I leave all these difficult, practical problems for the consideration of those who have brought here the results of long study and experience, and turn my attention to the value and

IMPORTANCE OF TREE CULTURE

as one of those arts by which man beautifies his abode, and manifests that taste which especially distinguishes him in the scale of animate being, and which he labors to gratify as soon as he has laid the hard and substantial foundations of State and Society. Men build first, and then plant. The primary work of erecting an empire, in which all the sturdy virtues are called into operation, and where courage fixes the national power, and wisdom establishes the national education, is not a field for the exercise of man's love of beauty. With the wars and the felling of the forests, and the log cabin and primitive school-house of a newly-settled country and a newly-founded empire, taste has but little to do. But when safety and property are made secure, and the highways are well worn, and the skill and strength of the cultivator have stripped the landscape of its natural beauty, and the foot of man has trampled out the graceful lines in which Nature always works, then there uprises man's demand for the beautiful, and he endeavors to restore by art what he was obliged to destroy for his subsistence. For whatever may be his outward circumstance, however hardening and depressing may be the incidents of his life, man has an instinctive love of beauty, which insists on being gratified. He knows that this is his distinguishing characteristic which separates him from the beasts that perish—an element of his mind and heart which leads him "from nature up to nature's God." To him the sunrise

means glory as well as daylight. The lone and lofty mountains elevate him to the contemplation of the Almighty power, even while they are "a shelter to the wild goats;" and the dewy pastures where the cattle graze and recline in the long shadows, lull him to the sweets of evening repose; the sparkling stream, "where the wild asses quench their thirst," will soothe and sing him to happiness and rest. The majestic and commanding tree, whose widespread branches shelter the panting animals from the blaze of the noon-tide sun, is a picture of power and strength and varying loveliness, which is to him a source of never-ending delight. When his eye surveys the swelling landscape, the emotions which belong to him as a child of the Creator of all, inspire and elevate him above the earth on which he treads, and distinguish him from that other order of animal existence, to which all scenery is alike, whose sensibilities no ugliness of nature or art offends, which no starry heavens delight, and no homely surroundings disturb; whose vision is blind both to the graces and deformities of even its own kind, which nibbles the daisy and the June grass with equal satisfaction, and whose soul "can not rejoice with those who rejoice, nor weep with those who weep." It is man alone who knows that "a thing of beauty is a joy forever."

TASTE IN TREE PLANTING.

It is in accordance with this sentiment that man has applied his skill and taste to the creation of all the charming scenery of groves and bowers and gardens, and to the enhancement of natural beauties themselves. Great gardens of antiquity, the monstrous towering pleasure grounds of Rome and Babylon, set an example which advancing civilization has not failed to follow. The cultivation of parks and

gardens constitutes one of the most interesting and important duties of modern art—a duty in the faithful performance of which England has set an admirable example. Leaving, in the early part of the eighteenth century, the formal and heavy style then in vogue, through the influence of some of her most illustrious poets—Addison at Bilton, and Pope at Twickenham—the English people revolutionized that whole system, and established that classical style of planting which has since been so much admired and imitated throughout the most refined parts of Europe.

This science of landscape gardening, which advanced so slowly in the Old World, and the proper system of constructing a city with light and water, and parks and shaded streets, which was so shamefully neglected until a comparatively recent period there, have until within a few years been entirely overlooked in our own country.

When more than seventy years ago, the city of Cincinnati was founded and the spot was chosen on which has been erected such a splendid array of public buildings, private dwellings, music halls, art galleries, churches and libraries, the application of art to the arrangement of gardens, parks, streets and highways, was hardly thought of. It was enough to clear the land and till it without converting it into a pleasing picture. It was all the early settlers in our country could do to blaze a path through the forest without considering how best to crown and drain a highway, and it was not until after the Revolutionary war that the planting of trees and shrubs was made a necessary part of the laying out of gardens and grounds. I remember well the only garden in the State of Massachusetts, laid out early in this century by an English gardener, and kept in good order until within a

dozen years, an object of delight to all who were allowed to enter its sacred inclosure and perambulate its well-visited walks. Such a scene as this was rare. Public-spirited citizens planted avenues of trees in highways, and were considered benefactors. Here and there a "door-yard" was ornamented with clumps of lilacs and syringas, but nowhere, that I am aware of, were there associations of enterprising and tasteful citizens organized for the purpose of adorning their towns and of providing for the health and comfort of themselves and of the community of which they formed a part. It remained for our own generation to unite for so important and laudable a purpose; and I congratulate this beautiful city that its natural comeliness has been enhanced and its suburbs made delightful by the combined efforts of those who believe that a love of beauty is a human attribute, and that we are under a sacred obligation to preserve that health which is given us for a high and useful purpose. The practical service of an association like this, as I have said, it is not necessary for me to discuss here, in the presence of those who know by experience how trees and shrubs should be grouped; who have learned that an evergreen should be transplanted in August, and that a little lime and muck applied to the roots when it is planted will give it a wonderful stimulus; who understand that a plantation of trees should be made to suit the building it is to surround and the landscape it is to occupy; that trees should not be planted too near a building, or too near each other; that the plants nearest the house should be low in stature and of a beautiful sort; that the shades of green should be properly blended, and the foliage selected accordingly; that trees should be protected by each other against those winds which are obnoxious to them;

that the Norway will not bear the rough gales from the sea, and that the Scotch pine rejoices in them; that trees and plants should not be "marshalled in regular order and at equal distances," like beaux and belles standing up for a quadrille or country dance; "that it is easier," as Downing says, "to make a tasteful park by planting new trees than by thinning out an old forest, and that nature herself is full of hints and suggestions," an observance of which constitutes the highest art of which man is capable in all that work of which earth, sea and sky form a part. With all this you have long been familiar, as the practicable part of a most agreeable labor; but for the trees themselves, these living monuments of nature's bounty, or of man's skill; those landmarks which we love to contemplate; those sentinels and armies along the landscape; those silent friends who somehow connect themselves with so many of the dearest scenes and events of our lives, and watch over the graves of the departed day and night, and through all the changing seasons—for the trees themselves let us say a word.

BEAUTIFUL TREES.

Now I know not how it is, but next to the face of an old friend returned from a long absence, the sight of a landscape or a tree, once familiar and connected with the early event of our lives, long lost and now bursting upon our vision, fills us with the tenderest emotion. Who that has suddenly come upon a flower by the wayside in a foreign land, which grew beside some well known path in the country of his home, has not been filled with sweet recollections and transported to that spot which will forever outshine the glory of all others?

How often have we turned our eyes unexpectedly upon a solitary tree keep-

ing watch and ward over a hillside pasture, and at once, as if the heavens had been opened, there came a vision as dear to us as the memory of that sacred band of the loved and lost! How often has a footpath, winding through the woods, opened suddenly upon us, and in a moment a long past, and perhaps long-forgotten hour of joy, shone around about us? The trees are indeed our companions, clothed by us with the most delightful associations, appealing and responding at once to our sense of beauty, and preserving, as it were, with tender care our choicest memories. Their story is all told and well told by the young Indian who, in the midst of the splendor of Paris, regretting the simple beauty of his native island, sprang forward at the unexpected sight of a banana tree in the Jardin des Plantes, embraced it while his eyes were bathed in tears, and exclaiming with a voice of joy, "Ah, tree of my country," seemed by a delightful illusion of sensibility to imagine himself for a moment transported to the land which gave him birth.

TREES OF HISTORY.

And then what a living and vital interest gathers about those trees which either by accident or by design have become monumental and representative. To know them well is to be intimate with the great deeds and the great men of history. Into what classic associations and deeds of daring, and raging and majestic conflicts by land and by sea, and profound mysteries and rites are we borne by the long and interesting story of the

OAK,

the tree which Pliny says held "*Honos apud Romanos perpetuus*"—the highest honor and repute with the Romans. We recall the solemn ceremonies of the Druids among the oak groves which stood strong and solemn on English

soil, during the morning twilight of English civilization. The scarred and sturdy tree near "White Lady's," in which the defeated monarch hid himself after his almost miraculous escape at the battle of Worcester—how like a guardian angel it stands in the history of royalty in England.

The contemporary of this tree, the wide-spreading oak of Hartford, spared from the primeval forests of America, as imposing and perhaps as ancient as the Pyramids, decayed and broken, concealing in its stout heart the Charter of Colonial Privileges—what a cherished and commanding figure it is in the record of freedom on this Continent! What a tale of valor and proud endeavor, and the heroism which triumphs where "the battle rages long and loud," could that pasture oak tell, which was borne from the fair hillside of Andover, Massachusetts, to become the sternpost of the immortal frigate Constitution?

THE ELM.

Call to mind now the story of the elm tree, and what a mingling of fable and fiction and interesting fact gathers around it. When Orpheus returned to earth from his melodious mission for Eurydice to the dominions of Pluto, and sat him down upon the verdant hill, it was the elm which first responded to his plaintive airs, and offered him his refreshing shade. It gave its name to the imperial city of Ulm, in Germany, and as Elmwood it designates the home of one of the most brilliant of modern American poets.

The elm planted by Henry IV., of France, in the Luxembourg gardens of Paris; the elm which Queen Elizabeth planted with her own hands at Chelsea, while waiting for the crown; the elms planted by Sir Francis Bacon in Gray's Inn walks, will not be forgotten so long as the memory of these remarkable

persons shall endure. And when we turn to the pages of Columella to learn the food most used for cattle in his day; and to the plays of Plautus to read with what twigs the Roman rogues were beaten; and to Evelyn to find out what timber made the best pipes, pumps, poles, ship-planks, beneath the water line; and to Galen and Pliny for a sovereign remedy for all the ills that flesh is heir to—we find that the elm reigns supreme, and is nutritive, corrective, medicinal, and imperishable, alike. To my mind there gather around this tree, also, historic associations at once romantic and tender. One hundred and fifty years ago, Captain John Lovewell, of Dunstable, Mass., with a little band of forty-six followers, started in early spring to drive Pungus and his tribe of Piquackets from the fertile lands which they occupied near Fryeburg, Maine, and from which they made their murderous assaults on the white settlements. The march was through pathless woods, and the expedition was one which required all the strength and courage which man can possibly command. Chaplain Frye, who accompanied the little army, was a young man, born in Andover, a graduate of Harvard, an exemplary youth, an accomplished scholar, and a devoted servant of Christ, the profession which he had chosen. On that beautiful May morning, when Captain Lovewell's men were ambushed by the Indian warriors of Pungus, on the shore of the Piquacket Pond, Chaplain Frye was one of the first to fall mortally wounded. When he left his home to join the expedition he planted an elm tree, in that early spring time, on a commanding eminence in his native town, in order, as he said, that he might be remembered should he fall in battle; and there it stands at this day, a lofty and noble monument to the devoted young Chaplain, putting on its green

robe each year on the anniversary of his death, and taking on its sad yellow hue in the autumn as if in mourning for him whose name it bears. And to every son and daughter of America, what a representative tree this is! Would you learn its significance? Go with me, then, to that ancient farmhouse, standing as it has stood for more than a century on that sunny slope which our fathers loved so well. That ancient dwelling, with its broad and open front, receiving on its ample brow the sweet south wind, and with its long sloping, defiant roof in the rear, closed firm against the invading north, the type of our ancestral architecture. It stands there still, as it has stood for generations, gathered around and supported by the massive chimney, which has so long sustained and warmed its hospitable heart. It is a bright June morning, and the sun is pouring in its flood of light upon the narrow entry, with its homespun carpet, and its steep and winding stairway, leading to the cheerful chambers, fragrant with sweet herbs and the sweeter air of heaven. From the sunken door-stone, trod into earth by the footsteps of many a hardy and honest generation, to the humble roadside, the green and grassy slope extends, telling its story of the joy and happiness which have gathered on its sod, and the sad tale also of sorrow and woe, how young and old have been borne out of that threshold, the child and the mother, the youth and the gray-haired father, amidst tears and sobs, down to the silence of the grave. And over all that scene the drooping elm looks down from its towering height, a witness of the domestic drama which has been acted there for years, and now the recognized type of those virtues which adorned our ancestors, those protests and assertions which made them great, the courage and defiance which made us free. Do you think there is

in all the world another tree like this American elm—the accepted ornament of our ancient rural homes, the grand and solitary sentinel, seen from afar, and telling this story of American life with which you are all so familiar, and of which you are all so proud? In this centennial period of our history, too, how this tree is woven into the heroic events of our annals! There are many incidents of that great time when our fathers rose up to assert their independence; the amazing stand at Lexington and Concord; the calm and steady courage at Bunker Hill; the solemn assembling of the Continental Congress; the generous devotion of the colonies to each other; the impressive patience of our own great revolutionary existence; but not one stands out in grander proportions than that scene at Cambridge, when Washington, in the calm majesty of his manly strength, assumed the command of a disorganized body of militia, named it the Continental army, and waged war against the most powerful Empire and the best disciplined troops in the world, and founded an independent nationality of freemen. The canopy beneath which this sublime event occurred has become immortal as the Washington Elm.

Who that is familiar with sacred history can fail to be reminded of the most stirring scenes in the career of God's chosen people, as he contemplates the

CEDAR,

the tree which crowned Lebanon, and was associated with the highest and most sacred art and architecture of the Jews. Never was tree dedicated to more illustrious architecture than when Solomon sent his four score thousand hewers into Lebanon and covered his Temple "with beams and boards of cedar." And the great king immortalized the tree when he selected it as the type of one of his no-

blest conceptions: "His countenance is as Lebanon, excellent as the cedars."

The temple of Diana, at Ephesus, which was 220 years in building, was constructed in its frame and boarding entirely of cedar. It is of this tree that Madame de Genlis says: "The rose will be in all countries the queen of flowers; but amongst trees the honor of being king belongs only to the ancient and majestic cedar." And so high a place has this tree secured in history, that "the few cedars still remaining on Mount Libanus are preserved with a religious strictness; and on the day of the transfiguration the Patriarch repairs in procession to them, and celebrates a festival called the feast of cedars."

TREES FOR INSPIRATION.

The intimate relations which trees bear to remarkable events and illustrious persons in history are almost innumerable, as you may infer from the few and striking illustrations to which I have called your attention. But these insensible though living companions of man do not stop here. They afford shelter and encouragement to his loftiest aspirations, and offer him protection and sympathy in those hours when his mind is filled with fervor and inspiration. Evelyn says: "Innumerable are the testimonies I might produce concerning the inspiring and sacred influence of groves from the ancient poets and historians. Here the noblest raptures have been conceived; and in the walks and shades of trees poets have composed verses which have animated men to glorious and heroic actions. Here orators have made their panegyrics, historians their grave relations, and here profound philosophers have loved to pass their lives in repose and contemplation." Would you find instances of this in your own day? Attend Hawthorne, then, in his wooded

walk at Concord, and learn the height which man's contemplation may reach amidst the whispering silence of the groves; join Thoreau in his forest seclusion, and know the inspiration which belongs to those solemn arches and to the leafy chapels which Nature prepares for her worshippers.

TREES FOR PROFIT.

And now, to him who, in a spirit of thrift and economy worthy of that people to whom as an American he belongs, would ask what is all this worth? let me say that the judicious selection and planting of trees may be made one of the most profitable branches of agriculture. Not for the beauty of the town alone, but for a thrifty use of remote and deserted acres also may the culture of trees be made a part of the business of life. A venerable clergyman in Massachusetts, the father of one of the most distinguished bankers in Boston, left at his death a large territory of woodland in the town which was blessed with his ministry for more than fifty years, and the profits on this land, which he had purchased at a very low rate at the beginning of his professional service, and which had been devoted to the growth of wood, principally pine, were greater than those realized on lands purchased and sold at the same periods in the most prosperous parts of Boston. "We have heard of a gentleman," says the author of *Practical Economy*, "whose lands were more extensive than fertile, whose practice was to plant fifteen hundred trees, on the birth of every daughter, upon his waste grounds, which were on an average worth one pound each on her becoming of age, thus enabling him to give her a fortune of £1,500 without any extraordinary economy on his part, the regular thinning of the trees at proper seasons, with barking, &c., paying off all the current expenses, be-

sides yielding him a small rent for the land." The profits derived from the growing of the pine, the locust, and the birch, all capable of flourishing greatly in light and somewhat worthless lands, have been in many instances very remarkable. Perhaps I would not recommend the cultivation of wood and timber as a universal branch of agriculture in these days when the secret of the business lies in quick returns and devotion to local markets; but I can find in the experience of those who have tried it an encouragement to those who, by the possession of large tracts of waste lands, may be compelled to follow their example in the business of tree-planting; and I read with profound interest the statement addressed to Governor Foster by an enterprising citizen of this State, with regard to his success in tree planting, and the groves of walnuts, maples and chesnuts which he is cultivating with pleasure and profit.

But more than all this, to the poetic and practical alike I would present the advantage of

ORNAMENTAL GARDENING,

both in our towns and around our rural homes, and its kindly effect upon the character of those who are subject to its influences. It is an old story, I know—this of the refinement and invigoration which attend pursuits upon the soil—but it is so true and so charming and, I am sorry to say, so little heeded, that it may, if properly told, be repeated a thousand times, and heard with pleasure and profit. The devotion of mankind in all ages to the land is a feature of social and civil history which can not be lost sight of by him who would trace the steps which man has taken in his progress and development. "To dress the garden and to keep it," was the first duty imposed on man when he entered upon his career on

earth, and "to dress the garden and to keep it" has been the desire of every man who, after long wanderings, has learned the point from whence all his impulses sprang. The poor man seeks the soil; the rich and the powerful believe in its refreshing influences and its repose. The industrious and frugal mechanics and labourers of our country all toil for a home and a spot which they can cultivate. The merchant of our day, like his ancestor in the early periods of our commercial history, when every man bought a farm, believe now in the delights of rural and suburban life. The law and the custom of our fathers was a land-holding clergy, established for life in their ministrations. From the farms and plantations of the colonies sprang brave and hardy and wise men, who gave us our freedom and our nationality.

I trust, therefore, that to this and to all other associations dedicated to the work of preserving and restoring our vast forest wealth, and of beautifying the earth upon which we tread, the people of this continent will extend a grateful heart and a helping hand.

In conclusion, let me urge upon this Association the most careful consideration of the topics before it—the use of forests; the conservation of forests; the influences, injurious and beneficial of forests; the educational means by which we may become acquainted with Forestry work. To what extent can the land-owner enter profitably upon the business of tree-planting and forest culture? What legislation can the States best adopt for the increase and preservation of their forests? How shall the General Government provide for the planting of forests on its public lands? What is the precise extent of forest waste? What is the comparative value of various timber trees? How shall we secure wind-breaks on the prairies? By what chemical processes

can we preserve our timber used in building and fencing? What forest trees are best adapted to various localities?—these are questions which should be answered as definitely as possible. They are questions which the American people are anxious to have answered, and before which all discussion of foreign legislation, all consideration of the value of wood products, all statistics of trade, all study of land tenure, sink into insignificance. I trust the deliberations of this convention will point the way by which these problems can be solved, and by which our vast forest wealth can be economically preserved and profitably used.

SOUTHERN CALIFORNIA FLOWERS AND FRUITS.

The habitat of our favorite flowers is always a source of interest to the flower-lover, as well as to the botanist,—but a climate, which will by adoption give home and nurture to the more delicate forms of plant-life, and give results nearly, if not quite, equal to the finest conservatory conditions, is one deserving the attention of amateurs. Below the 35th parallel, these results in multitudes of instances are daily witnessed. This is true of the valleys at the foot of the Santa Ynez mountains, and the valleys for twenty or thirty miles below sheltered by the trend of the coast from cold north winds and the hot winds of the desert beyond the mountains; especially in the belt of country known as the Santa Barbara valley, a strip of land lying on the sea-coast, protected by the outlying islands from ocean winds and storms, rendering the harbor a naturally fine one, where steamers land at all seasons. Then, with the protection on the north and west before noted, a climatic condition may be found embracing the needs of temperate, semi-tropical and many tropical plants. The Stephanotis will climb amicably beside the

fragrant Honeysuckle. *Tecoma Jasminoides* will intermingle its lovely leaves and flowers, shielding in winter the leafless *Wistaria* and rejoicing in the spring over its clusters of royal bloom. *Rhus* *Cotinus* will produce its wreaths of delicate fringe in the shadow of the *Magnolia* and *Pomegranate*. *Fuchsias* will lift their tall heads from circles of *Gladiolus* and *Tuberoses*, none feeling an alien presence of a stunted growth. But over all these will reign a crowned queen—the *Tea Rose*, and royally she fills the throne. No garden is complete without a hundred varieties of *Roses*, and with intelligent culture nothing finer in results can be imagined, and all the year around. April and May are, perhaps, the most royal months of bloom, but no season is without *Roses*, and a morning hour is required for taking off the old *Roses*, making room for the on-coming bud and bloom. A circle of these around a *Dicksonia antarctica* in carefully combined colors, with a border of *Diosma alba*, is a thing of beauty. You cannot cure the once possessor of such a garden; the gravitation toward it is as certain as the laws of any other gravitation. And the Eastern florist, after a winter among such gardens, will pack many a sigh and regret away in the recesses of trunks and portmanteaus, and with infinite disgust will fight Jack Frost another winter, until discretion becomes the better part of valor, and sooner or later the dream of a sunny home and a semi-tropical garden becomes a reality. A commingling of fruits from all zones becomes also a possibility. Citrus fruits grow side by side with the Apple and Pear, Figs and Bananas with Plums and Peaches. Perhaps nothing financially is of more importance to this valley than the following list of fruits: Apricot, Prune, English Walnut, Raisin Grape, Bartlett Pears, Olives, Egg Plums and Nectarines. The Peach does well ordinarily,

having off-years, and some varieties a curled leaf. These fruits are mostly purchased by the cannery in large quantities, as also immense quantities of Tomatoes. I have seen Tomato vines seven years of age, but young plants produce better. Eternal vigilance is the price of orchards here, as to insects, as elsewhere. But with it the finest results are realized. Olive culture is becoming prominent, and in another letter will be described. Lima Beans have brought, with their present high prices, a bonanza to farmers in this valley, in many cases realizing from \$75 to \$125 per acre, this season; the land is of course very rich and of many descriptions. Fruits of the leading varieties are proved, from the cash-books of producers, to vary from \$200 to \$500 per acre, and some instances of Apricots run higher, at six and seven years of age. Most fruits, deciduous ones, bear at three years from planting in considerable quantities.

As a home, with its thoroughly equable climate, neither hot nor cold, nothing can be more desirable than this portion of Southern California.—MRS. N. W. WINTER, in *American Gardener*.

HARDY RASPBERRIES.

The hardiness of Raspberries is a somewhat mooted question, but so much seems well established, that the amount of cold which the canes can withstand depends mainly upon the degree of ripeness of the wood. While a fully ripened cane may survive almost any possible degree of cold, an immature one may be killed by a few degrees below freezing point. Many varieties which we are in the habit of calling "perfectly hardy" were killed last winter by the unusual earliness—before the plants had ripened their wood—not by the intensity of cold. "Turner," "Brandywine," and even wild kinds, were killed down to

within a few inches of the ground, while the same degree of cold, if it had occurred a few weeks later, would not have injured them in the least.—*American Garden.*

CELERY CULTURE AT KALAMAZOO.

Celery culture is becoming a local industry of no small importance at Kalamazoo, the marsh land in the vicinity having been found to be admirably adapted to its growth. From the *Kalamazoo Gazette* we extract the following account of the mode of culture as there practiced :

"Not alone from the increased area will there be a larger quantity of celery in after years, but there is being more raised from the same land each year, as the gardeners become proficient in raising it, for it is comparatively a new industry for Kalamazoo. Instead of rows being five and six feet apart, as the books advise, they are raising it successfully three feet apart, and instead of five and six inches apart in the rows, it is raised half that distance, and as close as one's fingers for the last or winter crop, so double the crop is raised from the same land.

"Gardeners who have read books on celery raising say Kalamazoo men can teach the authors their A. B. C's in that business. Peter Henderson, the great New York gardener, advises to store it for winter by packing in shallow trenches, covering with lumber, marsh hay, etc. J. W. Wilson estimates that it would cost him \$300 for lumber to secure his crop in that manner. The Kalamazoo way is to dig about two feet below the surface; then board up about two feet above; then on a frame six feet high, 12 foot boards meet and slant down the sides, with windows, all of which is banked and covered with manure. They are usually built 24 feet wide, and 40, 75 or 100 feet long. If

the building is 50 feet long it will hold 50,000 celery; 100 feet long, 100,000 etc. It is built on upland, if possible, for marsh is too damp and cold. When first put in the houses it is green, but bleaches in a few weeks. They pack as close as it will stand, putting boards every few feet to prevent heating and rotting. People can keep their own celery as well as apples or potatoes, by putting some marsh soil in the bottom of a barrel, packing the celery, root down, not sideways, and keeping where it will not freeze. It is desirable to keep it growing. The sprouts may run over the top of the barrel, but will be no disadvantage. Put in green, and it will bleach, and you can wash, trim, as you wish for the table. One of the most annoying jobs in the business is the tying in half-dozen bunches. The long-felt want is for some Yankee to invent a self-binder."

CURRENTS.

If there is any living thing that possesses the Christian virtue of returning good for evil in a higher degree than the Currant-bush, we should like to know its name. Neglected and despised in an out-of-the-way corner, half-mothered under a tumbled-down garden-wall, or on a rubbish heap where nothing else could grow, a few Currant-bushes are frequently tolerated, and never thought of until the scorching July sun makes our system long for cooling and refreshing fruit acids. It is then that we call to mind our patient Currant-bushes, and become eager to gather—without blushing—their bright, glossy clusters, as interest for the worthless spot we have suffered them to occupy. Perhaps the advent of the Currant-worm is only a blessing in disguise, sent to teach us more charity and wisdom, and to compel us to give better treatment to our much misused bushes.

Try it for once to give the Currants a respectable place in the garden, and cultivate them like any other shrub or plant which you expect to bear fruit, and you will soon become convinced that "it pays" to give fair play even to a Currant-bush.—*American Garden.*

A CHANCE FOR BOYS.

Boys on farms want spending money, and are often sorely troubled to obtain it. Their best chance appears to be in cultivating some crop at home that requires small capital and a small amount of land for its production. The small fruits are excellent in these respects. They can generally be disposed of to greater advantage in country villages, or even among neighboring farmers, than in large cities, as there is no expense for packages, transportation, or for selling. The country boy can take his own fruit to his customers, sell it by measure, and pocket the proceeds. Probably the most profitable fruits to raise are strawberries and grapes, although blackberries and raspberries sell well in their season. Strawberries offer many advantages over other small fruits. It costs little to get a start with them. A hundred plants set out in a rich place after the bearing season will produce a thousand plants by fall. They will produce a good crop the year after they are transplanted. No implements are required for their cultivation except those found on every farm.

It takes but a small patch of land to produce 50 quarts of strawberries per day during the bearing season, and there are few places where they will not bring at least six cents a quart. By having late and early varieties, the strawberry season may be extended several weeks. There are few persons who will deny themselves strawberries. Grapes have some advantages over

strawberries. They are not as perishable, and may be transported long distances without injury. Mature grape vines are almost sure to produce a crop every year. There is little trouble in keeping grapes till Thanksgiving and Christmas, when there is always a demand for them at good prices. With grapes and strawberries to dispose of, any farmer boy can keep himself supplied with money and have some to lay up for a rainy day.—*Fruit-Grower.*

DO BEES INJURE GRAPES?

The above question has so often been asked, and so often been answered in the affirmative by persons who never took the pains to ascertain the truth of their assertions, that I now venture a few words.

I wish to relate a series of experiments made at the residence of one of the Western Illinois Bee Keepers' Society.

This gentleman was showing to a friend a bunch of grapes which, having been purposely placed in one of his hives of bees, had been left untouched, though it had remained there several days.

"Well," said the friend, "it might be that in a hive they don't work on the grapes; but, out-doors, where they generally get their honey, they will certainly cut the berries open."

"We can try," said the bee keeper.

All his grapes were being gathered that day, and as bees were thick among the vines just then, everything was suitable for the experiment. The two friends, therefore, took all the damaged berries from quite a number of bunches in the same spot and left them ungathered. A few hours after all the crop of grapes had been gathered except these particular bunches, they again went to the vineyard and found the grapes as they had left them. The bees were almost all gone.

"I do not think that only a few like this could do much harm," said the friend, "but you can't make me believe that if a large number of hungry bees had tried to get the juice of a bunch of grapes they could not do it."

Just as they were coming near the house, they noticed that a number of bees, having gone home a while before with a load of grape juice, were greedily coming back to the place where barrels of grapes had been left a few minutes, before being taken to the cellar.

"Now," said the friend, "is our chance."

They carefully took away everything in which the bees could find grape juice, picked up all the bruised berries scattered here and there, and left nothing to eat for the bees but one bunch of perfectly whole grapes.

The bees at once clustered upon it, and so many were there, that they hid the bunch completely. The friend looked at them with a smile of triumph. After a while they examined the bunch again; it was as shiny as a freshly-blackened stove. The bees had rubbed off all the bloom, but not one berry was opened.

The bee keeper then, with a needle, made a small puncture in one of the berries, the bunch was left in the same place, and when examined on the following day it was found that the bees had drank the juice as far as their tongues could go, *but they had not torn the skin open any further.*

I could further say that the bee keepers' society of Bordeaux (France), thinking that bee culture in that locality might interfere with the wine interests, made continued experiments the whole summer long, with all possible kinds of fruit, with results like the above. Let me add that the juice of grapes there is much sweeter, and consequently more tempting for bees than it

is here.—*American Wine and Grape Grower.*

THE BIDWELL STRAWBERRY.

The American Agriculturist says:

"After a careful inspection of the Bidwell strawberry, on various soils, and in different conditions, we feel like congratulating those who have received the plants as premiums. The productiveness of the plant is simply wonderful, and that is one great point in the strawberry, while it runs of unusually uniform size. With our present knowledge, if asked to name a strawberry which we would prefer to the Bidwell to send out as premiums, we could not do it, as we do not know of any one berry that we can so confidently recommend for general cultivation. The leading strawberry of the last two years has been the "Sharpless," and an admirable fruit it has proved to be. The markets are an excellent test of the value of a fruit, and the Sharpless has appeared in great abundance. As compared to the Bidwell, we should say that it did not equal that in productiveness, and was not so firm for shipping—still the Sharpless will long hold a prominent place in the list of first-class strawberries." *Purdy's Fruit Recorder* says: "We obtained from three different parties in Michigan, all of whom had their plants direct from Bidwell, fifteen thousand plants. Then to make sure that our plants were the same as Mr. Roe's, (who is properly and carefully cautioning the public against spurious plants), a friend ordered from him a few plants, which were set on our grounds. The three lots from Michigan and those from Mr. Roe have *all proved the same*, so we do not question the purity and genuineness of our plants, and further the shape of the fruit is of that peculiar cast shown in the drawing given by us, which was copied from the *American Agriculturist*,

describing this sort in an article written by Mr. Roe. The fruit is of the meaty, luscious character of the Sharpless, but more sprightly, and for us better, in sugar and cream ; and judging from these late spring set plants, the large size and uniformity of the berries, the fine clusters show to us it is a variety of a high order of excellence. Right alongside of our plantation of this sort we have a bed of Sharpless, set two weeks earlier, the first spring, and having a much better start. Yet the show of fruit in the Bidwell is as fine as those on the Sharpless.

THE PANSY.

We wish all the lovers of flowers among our readers to understand that no flower we cultivate in our gardens is more worthy of attention than the Pansy. The Pansy has long been a favorite with the florists of England, but the English varieties, though very large and perfect flowers, are of a loose, straggling habit of growth, and under ordinary culture seem unsuited to our warm and dry seasons. The Germans have produced varieties much better suited to our wants. The flowers give a great variety of colors, mottled, striped, crimson, and other colors, bordered with white, looking so nearly like the fancy geraniums that a single flower would be taken for a pelargonium, sky-blue, and almost black. The plants have a very compact habit, and flower very freely, from fifty to a hundred blossoms being often seen on a single plant at one time. The flowers are borne on a short, strong stem, and stand erect, above the leaves, producing a most charming effect.

The German varieties are very hardy, and if seed be sown in a hot-bed or cold frame in April, or even in the open ground in May, a good show of flowers will be had during the latter part of summer and until they are covered with

snow. They are the first flowers seen in the spring, and even a mild spell in mid-winter is improved to produce a few blossoms. From early spring until the middle of June every plant is almost a bouquet of flowers. If the weather is dry and hot after this time, and the bed exposed, the flowers after this will be small until the cool nights, and dews, and rains of autumn. From this, until heavy frost and snow, the pansy bed will not be surpassed by any in the garden.

Late in the spring an examination of the bed will show many young plants produced from the fallen seeds of the past summer. These can be transplanted to a new bed, and if they produce superior flowers this course may be continued ; but if the flowers exhibit deterioration in size, form or coloring, obtain fresh imported seed, and start a new bed. We cultivate flowers for the pleasure they afford us, and there can be no pleasure to any person of taste or intelligence in half doing any work, or in producing inferior flowers. All will therefore like to learn how to grow the pansy well. Select a place for the bed, if possible, where the soil is cool and shaded a little from the noon-day sun,—the north side of a fence, or building, or where trees will afford a shade, at noon, though not too much, or the plants will become “drawn,” that is long, slender, and weak. Give a heavy dressing of cow manure and dig the soil very deep—eighteen inches at least.

Make it fine and mellow, and do this work in a dry time, when the soil can be well pulverized. When prepared, set out the plants, and water until they are established. In such a bed you will have abundance of flowers during the whole season, though in very dry weather it is best to give a good watering—a thorough soaking—occasionally.

THE CARDINAL FLOWER.

(Lobelia cardinalis.)

This beautiful native we find advertised in some seed catalogues, among the novelties of the season. This is a move in the right direction, and this brilliant and gorgeous flower which has been growing wild in our meadows and along our brooks ever since man first set foot on our soil, and no one knows how many millions of years before, is probably a novelty to many who have lived a life-time within a short walk of its native habitat. We search the wide world over for "novelties," while here they are growing around us in splendor and brilliancy. Nothing more dazzlingly beautiful can be imagined than a bed of Cardinal Flowers in autumn, when in full bloom, grouped in a shady spot on a smooth, velvety lawn with a group of Cannas or Rhododendron as a back-ground.

THE CARNATION AND PICOTEE.

PROPAGATION BY LAYERS.

The proper season for layering is June or July. When the time arrives for performing the operation, procure a quantity of small hooked pegs; then take a trowel and remove the earth to the depth of an inch or so directly under the shoot to be layered. Take the shoot in one hand, and with the finger and thumb of the other hand remove the leaves from the body of the shoot, and shorten those at the top an inch or so. With a thin, sharp knife, cut through the strongest joint on the body of the shoot, cutting upward until within a short distance of the next joint, and if the joints are close it may be necessary to cut through more than one. The slit may be from one to two inches in length. Then press the centre of the shoot down to the earth, being at the same time careful to keep the slit open and the top in an upright position; take one of the pegs and

secure it in this situation. A little clean sand placed around the cut will aid in the formation of roots. In September or October the shoots thus layered will be rooted sufficiently to separate from the parent plant, when they may be cut away and removed to winter quarters.

PROPAGATION BY PIPINGS.

This is a simple operation, yet requiring great care and attention to insure success. Prepare a small bed in some partially shaded part of the garden, composed of the same materials as that recommended for the seed bed, but with a larger portion of sand. Select the strongest short-jointed shoots, and cut them off immediately below the second or third joint from the top of the shoot.

As fast as prepared in this manner, place them in a pan of rain water to prevent flagging. Plant these shoots, or pipings, as they are called, as soon as a sufficient quantity is prepared in the bed, an inch and a half asunder; water slightly through a fine rose, and after the leaves are thoroughly dry, cover with a hand glass and shade from the mid-day sun. Pipings may be prepared in July or August, and if closely covered with a hand or bell glass, and shaded from the sun, will scarcely require any water until rooted. If they should need water, it will be found, in most cases, sufficient to pour a little on the outside of the glass. This will moisten the earth inside, and prevent the cuttings or pipings from drying.

POT CULTURE FOR EARLY FLOWERING.

In September or October, provide a sufficient number of pots, six or eight inches in diameter at the top. Make a compost of two parts turfy loam, one part of thoroughly rotten hot-bed manure, and one part of clean lake or river sand; place on the bottom of the pots a layer of broken crocks, and on

this place a small quantity of the prepared compost. Take the plant in one hand by gathering the leaves together so that the roots may be all clear; hold the plant in the pot in such a way that the roots may lie lightly on the mould; then with a trowel in the other hand commence filling up the pot with the compost all around the roots of the plant. When this is accomplished, release your hold of the plant and take the pot in both hands, holding on by the rim, and give it a few sharp raps on some solid substance. This will settle the earth better than by pressing it with the hand. Give a slight watering from a water can with a fine rose, and the operation of potting is complete. In November place a hot-bed frame in a sunny and sheltered situation, and place on the inside of this six or eight inches of tan bark; plunge the pots in this up to the rims, put on the glasses, water moderately, and during mild weather give plenty of air. In very severe weather cover the frame with straw or mats to protect the plants from frosts, but in mild weather the covering must be removed, otherwise the plants will become weak. In spring the plants may be removed to the garden or other suitable quarters.

THE PINK

is hardier than either the Carnation or Picotee, and will thrive in any good garden soil with even ordinary care, but to grow and flower it in perfection, beds similar in form to those recommended for the Carnation must be prepared for them. The component parts of these beds should be three-quarters good loamy turf and one-quarter two years old well rotted cow dung. These materials must be trenched to the depth of eighteen inches or two feet deep, well mixed, and the surface raked smooth. Introduce the plants to the beds thus prepared, in

September, and plant them in the same manner as Carnations. In the following spring the plants will begin to show their flower stems. The largest and strongest of the plants will throw up numerous stems; these should be nearly all cut away at least a month before their time of bloom, leaving only the strongest stems, and removing from them the weakest buds. No plant, however strong, should be permitted to mature more than ten or twelve good full flowers.

TREE PLANTING.

The following extracts from an appeal to the people of Manitoba by Mr. H. P. Bonney, now of Hamilton, Ont., are well worthy of attention by the farmers of Ontario. We are fast making our country a treeless prairie, and already need to take up the subject of tree-planting in good earnest:

It is now over two years since I first devoted my attention to the subject of tree planting, and the more I learn of it the more I become convinced of the necessity of some means being taken to get our farmers to take a like interest in arboriculture, and I am sure that as soon as we all lay the matter to heart it will not be long before quite a change for the better in the appearance and climate of our country will take place, and our prairies will be more beautiful both to the eye and feelings than they are at present. Our timber, in fact all the timber of the North American continent, is rapidly being used up. It is not 400 years yet since Columbus first landed at San Salvador; yet in that comparatively short space of time the forests of America have dwindled down to one-fourth their original size, and as our population increases the consumption becomes more rapid, and unless we set to work energetically, and at once, to plant trees, it will not be many years

before our forests will be things of the past, and how shall we manage then? We want shelter from such storms as the one that caused such loss of life in the Northwestern States in January, 1873. (Remember that storm passed over Manitoba, too). We want to see our grain stand up instead of lying down, as it only too often does now-a-days. We want to get rid of our hail storms and check the progress of the insatiable "hopper," and tree planting is the only remedy for all these evils.

To surround ourselves with trees will make us happier, richer and better—for man generally feels a better man when living in the midst of beauty than he does when living in a dull, monotonous plain.

BOOK NOTICES.

The *Agricultural Review* and Journal of the American Agricultural Association for May, contains an exhaustive article on the Cattle Industries of the United States, by Hon. J. B. Grinnell of Iowa, giving a complete history of cattle breeding, the development of the industry, and a detailed description of cattle raising on the Plains in the Western States and Territories; showing the lands best adapted to the business, and describing the methods of herdsmen owning from 500 to 20,000 head each.

The number also contains articles by Hon. Cassius M. Clay, Dr. Peter Collier, Prof. J. P. Stelle, Hon. T. Bowick of England, Col. Robert W. Scott of Kentucky, Dr. E. Lewis Sturtevant, and other practical and scientific writers.

The January number and Supplement contained the proceedings in full of the Great National Agricultural convention recently held in New York, including addresses and papers by Hon. J. F. Kinney, Francis D. Moulton, Dr. John A. Warder, Rear-Admiral Ammen, Gen. H. E. Tremain, Hon. N. T.

Sprague, X. A. Willard, Seth Greene, and other leading writers and speakers.

The thirteen papers on Ensilage, giving full directions for growing the crop, building silos, and preserving the fodder, by the ablest practical experimenters in the United States, comprising the fullest, most reliable and most valuable information on this subject yet published.

The *Agricultural Review* is published quarterly with supplements, and is pronounced by the highest authorities the most valuable publication of its class issued.

Terms.—\$3.00 per year. Edited and Published by Jos. H. Reall, Secretary of the American Agricultural Association, 26 University Place, New York.

The American Exposition of Products and Manufactures, being inaugurated by the Association, gives unmeasurable value to the *Agricultural Review*.

THE AMERICAN ENCYCLOPÆDIA OF AGRICULTURE.

This work, as the name indicates, is, in point of fact, an Encyclopædia of Agricultural Knowledge. It is a truthful record of agricultural progress, and not of methods that have gone out of date. It is a handsomely bound volume of 1,100 pages, of which 38 pages are devoted exclusively to the household department. The important subjects of economic entomology, forestry, agricultural geology, the grasses, farm laws, manures, ornithology, horticulture and veterinary science, and in fact all other subjects of special interest in a volume of this kind, are concisely considered. A needed work has been supplied, and it is one every progressive farmer should have in his library. It is a library of itself. Edited by the Hon. Jonathan Periam, and published by Rand, McNally & Co., Chicago.

WITHERED FLOWERS.

'Twas on a bitter winter's day,
I saw a strange, pathetic sight;
The streets were gloomy, cold, and gray,
The air with falling snow was white.

A little ragged beggar child
Went running through the cold and storm;
He looked as if he never smiled,
As if he never had been warm.

Sudden, he spied beneath his feet
A faded button-hole bouquet;
Trampled and wet with rain and sleet,
Withered and worthless, there it lay.

He bounded, seized it with delight,
Stood still and shook it free from snow,
Into his coat he pinned it tight,—
His eyes lit up with sudden glow.

He sauntered on, all pleased and proud,
His face transformed in every line;
And lingered that the hurrying crowd
Might chance to see that he was fine.

The man who threw the flowers away
Never one-half such pleasure had;
The flowers' best work was done that day
In cheering up that beggar lad.

Ah, me! too often we forget,
Happy in these good homes of ours,
How many in this world are yet
Glad even of the withered flowers!

St. Nicholas.

THE SHARPLESS STRAWBERRY.—I will give my experience. Have only raised one crop of berries, the plants being set a year ago last spring. They were extra strong, vigorous plants, were set in common clay garden soil. The berries were the largest I ever saw. They astonished every one that saw them. I weighed several that weighed an ounce each. Their shape is irregular, but their flavor is delicious, as all will testify who tasted them. They stand up well from the ground as any berry possibly could, as heavily loaded with fruit as my plants were. I filled a pint cup rounding full, one day, from some I had been picking, to let my neighbours, who were present, see how many berries it would take to do it; poured them out and counted them. There were thirteen berries. I may say with truth, there were no small berries on the vines, the smallest being about like a medium sized Wilson's Albany Seedling. I have had considerable experience in the culture of strawberries, but never saw anything to equal the Sharpless.—MRS. J. McRAE, in *Prairie Farmer*.

MOUNTAIN MAHOGANY.

A remarkable wood, known as "mountain mahogany," is said to grow in Nevada. A local paper thus describes it: "The trees do not grow large. A tree with a trunk a foot in diameter is much above the average. When dry the wood is about as hard as box-wood, and being of very fine grain might, no doubt, be used for the same purposes. It is of a rich red color and very heavy. When well seasoned it would be a fine material for the wood-carver. In the early days it was used for making boxes for shafting, and in a few instances for shoes and dies in a quartz battery. Used as a fuel it creates an intense heat. It burns with a blaze as long as ordinary wood would last, and is then found (almost unchanged in form) converted to a charcoal that lasts about twice as long as ordinary wood. For fuel it sells much higher than any kind of wood; indeed a cord of it always brings the same price as a ton of coal. The only objection to it is that it creates such an intense heat as to burn out stoves more rapidly than any kind of coal, however bad."—*Journal of Science*.

JAMES VICK.

As we go to press the telegraph brings the sad intelligence that James Vick, the well known and everywhere esteemed horticulturist, is dead. American horticulture has lost a most devoted and enthusiastic promoter; and every lover of flowers in all this broad continent will feel that a much-honored friend and counsellor has fallen.

THE Canadian Horticulturist.

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[No. 7.

CHERRIES.

In our climate the Duke and Morello varieties of cherries are the most valuable, and although these are for the most part more acid than the more tender Heart and Biggareau cherries, yet when we consider their superior culinary qualities they seem on the whole to be the best, as well as the most hardy. Many years ago the Kentish cherry was very largely planted in the Old Niagara District, and rows of them formed the boundary of the apple orchard, or a lane from the highway to the house. These have grown old and decayed, and mostly disappeared, without having their places supplied by more recent planting. Hence the supply of cherries, in proportion to the population, is much less than it was five and twenty years ago; and we presume this is, in the main, true of the whole of the Province of Ontario. Taking all things into consideration, we esteem this old Kentish cherry the most valuable variety that is grown in Canada. It is the most hardy of all, capable of enduring a very severe degree of cold, and of accommodating itself to a great variety of soils. It is an exceedingly abundant cropper,

coming into bearing early and continuing to bear to extreme old age. When about half ripe, that is when the fruit is of a bright red, it may be used for pies, tarts, and all cooking purposes; and when fully ripe, at which time it will be of a dark mahogany color, it is a very agreeable dessert fruit. If any cherry tree can be planted with profit for market purposes, this variety will yield the most sure returns of any that have yet been fully tested.

New varieties have been brought to our notice within a few years. Prominent among them is one raised by James Dougall, of Windsor, Ontario, which he has found to be one of the most hardy sorts in his collection. It is to be hoped that it will soon be widely disseminated over the Province, and its ability to endure the cold fully tested.

The Leib is also a promising variety, of larger size than Early Richmond, less acid, and of better quality. It gives promise of being very hardy.

Trial is being made of some of Weir's new cherries, in the hope that some of them will be found to be well

adapted to our climate. Of these his Flagg, Galusha, and North-west seem to give promise of being extremely hardy, excellent in quality, and enormously productive.

The colored plate which is given in this number is a representation of a new variety lately introduced under the name of "Cumberland." It originated in Pennsylvania, and is highly commended by prominent horticulturists in that State.

AMERICAN FORESTRY.

It is both interesting and gratifying to see that there are representative men, occupying positions of influence and power, who are alive to the importance of preserving, and in some places of restoring, the wood-lands of America. It is so natural and easy for men to become absorbed in the study of what seem to them, and are, great questions of state policy, questions affecting the great interests of commerce, manufactures and national prosperity which have engaged the attention of statesmen in all civilized countries, and will necessarily engage it to the end of time, that when an effort is made to interest them in a subject such as this of forestry, they are slow to be convinced that it is a matter that should engage their attention, and are disposed to look upon those who have studied the subject as enthusiasts. But men who can take broad views of national interests soon find that this is a subject which touches the national prosperity at many points. That it has most vital connections with commerce, with manufactures, with the supplies of food, with the health and the life of a people. Among such men stands prominently the Hon. Mark H. Dunnell, of Minnesota, whose speech in the House of

Representatives of the United States is replete with earnest words, most valuable information, and an evident appreciation of the importance of the subject. From his speech we learn that in February, 1874, a committee of the American Association for the advancement of science brought a memorial from that body to the President of the United States, urging the duty of Government concerning the cultivation and the preservation of forests, and recommending that a commission should be ordered to mature plans calculated to meet the requirements of the subject. The President laid this memorial before Congress, which resulted, in 1876, in the appointment of Dr. Franklin B. Hough, of Lowville, New York, to the duty of ascertaining the annual amount of consumption, importation and exportation of forest products, the probable supply for future wants, and the best means for the preservation and renewal of forests; the influence of forests upon climate, and the measures applicable in this country for the planting of forests.

In pursuance of this appointment, Dr. Hough made two reports to Congress, one in 1877, the other in 1878-9. Of the first of these an officer of the Wurtemberg forest service says: "It awakens our surprise that a man, not a specialist, should have so mastered the whole body of American and European forestry literature and legislation."

From this speech we also learn that the quantity of pine lumber produced in the State of Maine has steadily declined from an average of 100,000,000 of feet per annum in 1851 to 1855 to an average of 11,800,000 per annum in 1876 to 1881; that the timber supply of the upper peninsula of Michigan, at the rate of production in 1879, will last *eighteen* years; that of the lower peninsula will last *seven* years; that of the State of Wisconsin scarce *twenty*

years; and that of Minnesota about *eleven* years; and that at the rates of present consumption in the North-west, the whole supply of the timber of the United States would last about *seventeen* years. Hence he concludes that it is the duty of Government to inquire how far it can withdraw remaining timber lands from market and place them under regulations that shall secure the greatest present benefit from the use of timber now fully mature, having regard to the requirements of the future, and to ascertain how to impress upon private owners the importance of planting, and how far and in what manner it may encourage this object. To this end he advises the establishment of experimental stations for the careful study of the requirements and capabilities of soils, and of the several kinds of trees, and publish the results in a form particularly calculated to impress their importance, and to teach the simplest rules for securing success. He concludes his very interesting and instructive speech by saying:

"We are using up the capital which nature had for centuries been providing for us in the growth of forests, and we are doing nothing to restore them. Under skillful management the supply might be so arranged that in twenty-five or thirty years for some kinds, and in fifty or sixty years for others, a new crop would be furnished by growth; and if only a twenty-fifth or thirtieth part of the former, or a fiftieth or sixtieth part of the latter, were taken yearly, the supply would be perpetual. But, instead of this, we are taking a tenth or a twentieth part every year, while the growth from our neglect is not a fourth part of what it should be where any growth is allowed.

"We shall only too soon be reminded of the consequences of this improvidence in the growing prices of lumber, which

in some kinds have already doubled within a very few years, and which are advancing every day. These advances may be ascribed by some to speculation, and doubtless to some extent they are, for the speculator never loses a chance to turn a penny in his own favor, it matters not who suffers; but when these advances are steadily going on from month to month, and year to year, at an accelerating rate, it means that the intrinsic value of the commodity they represent is becoming greater under the combined effects of diminishing supply and increasing demand. It will inevitably lead to the realizing conviction that there is profit in growing timber, and the sooner this is understood and acted upon the better will it be for the country and for the future."

The large gathering of influential and representative men which recently took place in Cincinnati, embracing not only scientists, whose special studies have led them to understand the importance of this subject, but also members of state and national legislatures, leading agriculturists, and the chief of the National Agricultural Bureau, this gathering is a cheering evidence that our neighbors across the border are becoming aroused to the importance of this subject, and that steps will be taken to prevent the needless destruction of their forests, and to secure the planting of woodlands as a branch of economic industry.

It is also very gratifying to us as Canadians to know that the Honorable the Commissioner of Agriculture for Ontario is fully alive to the great importance of this matter to us, and that he is using every means at his command to procure and diffuse information on this subject, and to encourage the planting of forest trees for timber, shelter and fuel, wherever it can be done with advantage.

Doubtless our own forests are disappearing as rapidly as those of our neighbors under the united ravages of the woodman's axe and the devastating forest fires. Already some parts of Ontario are beginning to suffer for want of a due proportion of woodland in the diminishing volume of her springs and streams in protracted summer drouths, and in the unbroken sweep of frost-laden winter winds. It is time, full time, that public attention be turned to this matter; that something be done to limit the annual cutting of lumber, so that it shall bear a proper relation to our present supply and present needs; that measures be taken to prevent wholesale destruction by forest fires, and that planting be commenced without delay on lands suitable for the purpose, with a view to keeping up the supply perpetually, and of preserving the proper proportion of woodland, so as to save us from those climatic changes which are sure to follow the denudation of the country, bringing in their train drouths, excessive floods, sterility, famine and pestilence.

RIPENING GRAPES.—Josiah Hoopes says in the *N. Y. Tribune*:—"No surer evidence of the impropriety of defoliation to admit the sun's rays can be cited than the results of recent experiments in bagging grapes. We see that the covered clusters ripen more thoroughly, color more beautifully and assume that charming bloom which, without artificial aid, in many sections, they rarely attain. The foliage in a great measure acts as the lungs do in the animal creation, and every perfect healthy leaf taken off a plant destroys a portion at least of its power of subsistence, for vegetation extracts from the air a wonderful amount of nutriment, which enters into its organism through the myriads of minute apertures which nature has so wisely ordained for this express purpose. Then why partially cut off its means of supply to gratify the whim that fruit must receive the direct rays of the sun?"

HORTICULTURAL GOSSIP XIV.

BY L. WOOLVERTON, GRIMSBY.

The Horticulturist.—Our magazine is making rapid strides in advance. The beautiful plates which embellish the volume for 1882, will make it an attractive table book, and the large number of practical hints cannot fail to make it popular with fruit growers in general. I have shown some numbers to several growers here, who had become apathetic toward our Association, and I have succeeded in demonstrating that a horticulturist cannot spend a dollar to better advantage than by subscribing for the *Canadian Horticulturist*, a magazine which is entirely devoted to his interests; for in addition to this he also gets the Report of the meetings of the Association, nicely bound for preservation, an excellent plant, and the benefit of some very interesting discussions.

Altogether, I am quite sure that the Ontario Fruit Growers' Association has entered upon a new era of prosperity, when the labors of its Directors will be more than ever appreciated by the public.

Keeping a Calendar.—For some years I have been in the habit of keeping a calendar in connection with the orchard, and would recommend it to others, as forming in time a useful book of reference. A book of twenty-four pages, foolscap size, is convenient for the purpose. Two pages may be devoted to each month, and will answer for six years by dividing each page into three perpendicular columns, one for each year. The number of horizontal lines ruled upon the sheets will correspond with the number of days in each month. This will afford room for a brief note for each day of the month, and will present before one, at a single glance, the same day of the same month for six different years. Comparisons can

thus be easily drawn, and will often be of practical benefit in planning work. For example, here are a few extracts for the month of May for six years, without, of course, showing the form, which would require too much space :

1874.—18th, Peach blossoms. 25th, Apple bloom.

1875.—1st, Snow. 7th to 11th, Wet. 22nd, Cherry and plum bloom. 26th, Killing tent-caterpillars. 27th, Apple bloom.

1876.—18th, Peach and cherry bloom. 20th, Transplanting tomatoes. 25th, Killing tent-caterpillars. 26th, Apple bloom.

1877.—3rd, Sowing early corn, planting pear, quince and peach trees. 8th, Started cultivator among currant, strawberry and blackberry plants. 15th, Peach bloom. 18th, Hot. Corn up. 20th, Apple bloom. 22nd, Rain. 23rd, Transplanting from hot beds. 24th, Killing tent-caterpillars. 25th, 10 acres ready for corn. 30th, Killing cankerworms with garden syringe and Paris green.

1878.—3rd, Apple bloom. 5th to 8th, Too wet for working soil. 9th, Transplanting from hot beds. 10th, Cold and chilly. 13th, White frost cutting off beans, tomatoes, strawberries, cherries, potatoes, &c. 21st, Corn all planted. 24th, Hot. 25th, Killing tent-caterpillars. 30th, Digging out peach borer.

1879.—Great drouth through the whole month. 17th, Peach bloom. 23rd, Apple bloom. 26th, Killing tent-caterpillars.

1880.—5th, Peach and cherry bloom. 11th, Apple bloom. 18th to 30th, Very dry.

Bearing qualities of various kinds of Apple trees.—This would be a very practical subject for discussion on some occasion, and a great deal of interesting data might be gathered. According to my own experience the leading apple in this respect is the Rhode Island Greening. One old tree of huge dimensions, about seventy years of age, produces enormous crops, almost beyond credulity. One season the huge yield

of twenty barrels was taken from it, and from fifteen to seventeen barrels is by no means an unusual quantity each alternate year.

I do not think any other kind will equal this one for productiveness. The Baldwin, at maturity, will yield eight or ten barrels, the Snow or Famense about six, while the Fall Pippin and the Early Harvest yield about four barrels each every alternate year.

Now, if we could obtain from various sections of the country information as to the productiveness of the various kinds of apples, it would be a very useful aid to those wishing to select varieties for orchard planting, because it would help them to determine what varieties would give the highest net returns per acre.

FRUITS OF MANCHURIA.

An interesting letter has been received by Mr. Thomas Beall, Lindsay, one of the Directors of the Fruit Growers' Association of Ontario, brought out by inquiries made by him concerning the fruits of Northern China, or properly Manchuria, with a view to ascertain whether there might not be some found there which, on account of their ability to endure extreme cold, might be worthy of introduction for planting in the more northern parts of this Province. The letter is dated at Newchwang, 23rd February, 1882, and is as follows :

"MY DEAR DOCTOR WATSON,—I fear the fruit trees of this Province are valueless for the purposes of the Ontario Association. The gooseberry does not exist here, and the raspberry is only known in a wild state (in the south of the Province). I have not seen the cherry here, the fruit we eat being imported from Chihli or Shantung—in which latter Province I have seen fair specimens, but none which would repay transportation. The native plum I

have seen in our own garden. We value it for its spring flowers, and it must be confessed it blossoms magnificently. Last year we had two trees in fruit—a five and a four-year old. They bore remarkably well, and to our surprise the fruit was palatable. It is a small russet brown plum, not unlike some of our common varieties at home; but one could not say of it that it is equal to our inferior sorts, or that it is a fruit one would care to eat if one had any choice. The pear is abundant all over the Province, and during my last journey down south, I saw some fine large growers of some fifteen to twenty years' standing. Those I have myself grown are from Kuang-Ning, in the west of the Province, where the Chinese seem to take some pains with the cultivation. I was supposed to have quite a large assortment, but I can only count four varieties, and of these, I say confidently, there is not one which would be tolerated in the west. It might be worth while to enquire whether the variety we commonly speak of as the 'Peking' pear (native of Chihli Province), would not bear removal to America, but I should fancy we only think it luscious in comparison with the turnip taste of the others. I confess I have eaten it as a great delicacy in mid-winter, but then it was in the north of China, and after I had forgotten the taste of home fruit.

"The peach is also a poor thing in this Province, nor did I ever think much of it in Shantung. Some good judges, however, declare it to have a flavor of its own, and I have heard one friend say, that neither the English nor American varieties which he has tasted have the rich, fruity flavor of our native peach (such as we have here in our own garden). Of this you are yourself competent to judge, as you have frequently tasted them. It is noteworthy, however, that the very palatable peaches

you ate last year in Mrs. C.'s garden were from wild plants sown only three or four years ago. We had no such good eatable peaches ever from trees we consider to be grafts.

"As to the grape, I should not fancy we have anything to offer to the west. I differ from most in their enthusiasm for the grape of this Province. All I know is that I could not refrain from eating grapes in Shantung, even when I suffered a severe penalty, whereas here I am simply beyond temptation. I have eaten grapes in Germany, where they were as common as gooseberries with us, and I am meanwhile awaiting the advent of a grape which will dimly remind me of these. But the Chinese seem to me very backward in the matter of grape culture, and therefore we don't know as yet what the native varieties are capable of. For the quince you must enquire further south. I used to see it used largely in condiments in the south of Shantung Province.

"We have, of course, no currants. As you know, a year or two hence we shall have some notion of how American fruit trees do in our Manchurian climate. Excuse poverty.

"Yours sincerely,

"J. MACINTYRE.

"P.S.—Mr. Macintyre refers to some fruit trees which he and I got last year from the States. We can say nothing of them yet. J. W."

This letter was accompanied by one from Dr. Watson himself, dated at Newchwang, 2nd March, 1882, in which he says:

"I very much fear there are no fruit trees worth sending to Canada from this portion of China. There are two pears however—a large and a small kind—grown in and near Peking, which to my mind are simply delicious. I differ from Mr. Macintyre in his esti-

mate of the grape. It certainly is not so sweet as the hot-house grapes we get in England, but it is beautifully grown, and the fruit ripens in immense and splendid bunches from three to ten pounds in weight."

ORNAMENTAL TREES AND PLANTS.

BY GEORGE ELLWANGER, ROCHESTER.

THE HAWTHORN.—(*Crataegus*.)

This distinct and interesting genus is deserving of far more attention than it has generally received. If nature be taken as a guide in the effects produced by the employment of different varieties of trees in adorning and individualizing sylvan scenery, the Hawthorn will stand among the best types of arboreal picturesqueness and a certain boldness of beauty. Among ornamental trees it should be accorded a high rank; as an English enthusiast observes, "it brings the fragrant breath of summer—the purity, freshness and perfume of a real June day." No less on account of its beauty of bloom, however, than for its other many valuable characteristics, should it receive acknowledgement as an important factor in landscape adornment. All of its many varieties are perfectly hardy, thriving in almost any dry soil. In general they produce fine shaped, low trees, occupying comparatively little space, and whose wealth of green foliage and compact heads form most pleasing objects, the tree being scarcely less attractive during winter in its rugged picturesqueness of naked lines. The flowers are conspicuous, of varied colors, from white to crimson, the single varieties especially possessing a fine aromatic perfume.

During autumn and early winter, when the beauty of most deciduous trees remains only as a memory, most of the species stand out in brilliant array, covered with bright red and yellow fruits. Many garden birds remain

as long as the berries are plentiful, and on the fruit of trees skirting woodland, the grouse and other birds are in the habit of feeding in the fall. In addition to its other qualities, the thorn is of much value for its wood, which is almost equal to that of the much prized box, and which is even finer in color. No more advantages can be enumerated for any other genus of ornamental trees. The blooms of the double flowering varieties, together with the single scarlet and pink, are very desirable for decorative purposes. They are also fine objects for conservatories, forcing well and flowering finely. For this purpose the Hawthorn has also been unjustly neglected; and by utilizing it florists might add largely to their store and variety of valuable flowers.

Among native varieties the scarlet fruited is in particular worthy the attention of the landscape gardener. On our own grounds we have a large tree of this charming variety upon which, perhaps, a hundred summer suns have shone, which nature kindly planted in a corner of a line fence. No tree in our arboretum is more admired when in bloom or in fruit. The flower is large, of a pure white, the berries flashing a deep scarlet, and being quite pleasant to the taste.

The double varieties I have referred to—Paul's Double Scarlet, the Double White and the Double Pink—are all European sorts of the *crataegus oxyacantha* type, and are specially recommended for small town gardens, as well as for large lawns and parks. These are all profuse bloomers, covering the trees with miniature roses. The English, appreciating the beauties of the Hawthorn, employ it for hedges more than any other material; and any one who has travelled through English lanes in the flowering season will remember with after-delight the pleasing im-

pressions to sight and smell. Most of the American species are of more robust growth than the European, and therefore better adapted in our climate for hedge purposes.

The Cockspur Thorn, which is widely distributed over the Northern and Middle States, is one of the most vigorous growers, and, if planted in good soil and well taken care of for the first few years, will make an impenetrable barrier for animals.

It does not take up as much room as the Osage Orange and Honey Locust, and can be kept under control with the shears. The Thorn is also more lasting than either of these commonly employed hedge plants, besides being easier cared for, and more ornamental on account of its beauty of flower and berry.

Some of the most distinct varieties in the very large list that have come under my observation, are herewith presented, without adding any particular description, which may be found in the Ornamental Catalogues. It may be stated that the most ornamental are the double varieties previously referred to, and which I place at the head of the list, as deserving the very highest commendation :

Double Varieties.—Paul's Double Scarlet, Double Red, or Superb, Double White, Double Scarlet.

Single Varieties.—Gumpper's Variegated Scarlet-flowering, Pink-flowering, Common White, Variegated-leaved, Scarlet-fruited, Douglass, Azarole, Glossy-leaved, Hybrid Smooth-leaved, Black-fruited, Tomentosa, Oriental, Parsley-leaved, Cockspur, Tansey-leaved, Pyramidal, Maple-leaved, Medlar-leaved, Apple-leaved.

While the double-flowering varieties may, perhaps, be chosen in preference for single specimens where space is limited, the various single varieties are almost equally deserving a place in

larger collections where the space will admit. As to choice among the many excellent sorts, this may best be left to individual taste.

NEW VARIETIES OF STRAWBERRIES.

Manchester.—This is certainly a remarkable strawberry. It is a new variety to the world at large, and yet it has been carefully tested for seven years on a private fruit farm, and each year has been growing in favor with those who have had an opportunity for inspecting the fruit. The Manchester will, I think, prove a decided favorite with those who have sandy soils, as it gives fine crops on such soils that are so light that weeds do not thrive well upon them. Another very valuable point is that the berries are very firm, and stand shipment finely, and usually keep their color so well that they can be kept on sale a day or two longer after being picked than can most strawberries. The fruit is of good size, and ripens from medium to late in the season.

Mt. Vernon.—Though this variety is not sufficiently firm to ship long distances, yet the fruit is so luscious, and of such a brilliant scarlet color as to make it a great favorite for home use or near markets. The berries are of large size, and average large. Their uniform size and brilliant color makes them sell well in market—one-third of an acre yielding over \$600 worth of berries. The fruit ripens moderately late, making it possible to extend the season a week or two longer than would be the case if only early varieties are planted.

Bidwell.—This is proving very popular. The plants are exceedingly productive, the fruit at times averaging as large as the Sharpless, and sometimes being produced to the extent of as many bushels to the acre as the far-famed Crescent. It is a fine eating berry, and

also a good shipping berry. The plants are very vigorous growers, and, what should be carefully noted, have stood the drouth here better than almost any other strawberry, scarcely a leaf having wilted or burned. It is well worthy of trial.

Orient should succeed in places where the Monarch of the West does well, as it has very similar habits of growth. *Finche's Prolific* is also a vigorous growing variety, and a promising market sort. *Sharpless*, *Miner's Great Prolific*, *Chas. Downing* and *Capt. Jack* are other excellent varieties that succeed finely in many places.

Of the one or two hundred varieties that I have been growing at different times, the above, including the Wilson's Albany, appear to be among the most desirable.—R. H. HAINES, in *Southern Cultivator*.

HANGING BASKETS.

For hanging baskets the Partridge vine is invaluable, as its brilliant scarlet berries enliven and relieve the sober green. Take up large vines of it with as many berries as possible. If they are green when found they will turn red shortly. Always place the vines around the edge of the basket, put in some *Maurandia* vines to climb the wires. For the centre a *Happy-Thought Geranium*, or what is prettier, a *Myosotis*—*Forget-me-not*.

The popular tradition, which tells how the name of *Forget-me-not* came to be applied to the plant which now bears it throughout Europe, is not generally known. It is said that a knight and a lady were walking by the side of the Danube, interchanging vows of devotion and affection, when the lady saw on the other side of the stream the bright blue flowers of the *myosotis*, and expressed a desire for them. The knight, eager to gratify her, plunged into the river, and,

reaching the opposite bank, gathered a bunch of flowers. On his return the current proved to strong for him, and after many efforts to reach the land he was borne away. With a last effort he flung the fatal blossoms upon the land, exclaiming as he did so, "*Forget-me-not!*"

"And the lady fair of the knight so true
Still remembered his hapless lot,
And she cherished the flowers of brilliant hue,
And she braided her hair with the blossoms
blue,

And she called it *Forget-me-not*."

—*Floral Monthly*.

OLD AND NEW PLUMS.

A New Jersey plum grower writes to the Chicago *Inter Ocean* the following in reference to plum culture :

"There is something peculiarly fascinating in this fruit—a certain charm connected with it, that makes the person who is presented with a basket of plums generally feel that he is receiving an unusual treat. It may be that it is partly owing to the widely prevalent theory, "That the sweetest roses have the most thorns," that this is so, and that consequently as it is usually thought that the plum is a very difficult fruit to grow, it is more highly prized on that account. It certainly is a decided favorite, otherwise persons living in large cities, like New York and Boston, could not be found paying for plums at the rate of a cent a plum at the retail fruit stands or of \$2 to \$3 for a half bushel of the fruit in the wholesale markets. On some accounts the plum is a difficult fruit to grow, not so much from its requiring any special training or cultivation, as superb large plums are often grown on ground that is not touched by plow or hoe oftener than once in five or ten years, but the difficulty arises from the fact of the liability of the plum to be stung and

injured by a little insect called the curculio, causing the fruit to decay or fall to the ground before ripening. The curculio is a small grayish brown insect, about one-sixth of an inch long, and with wings that appear like two little humps on its back. Owing to the crescent-shaped mark that it makes when biting into the young fruit and laying its eggs, it has also been given the name of the "little Turk." However, fine crops can easily be obtained in most sections of the country, notwithstanding this insect. One of the simplest or surest methods is to plant the plum trees in a chicken yard, or to turn the plum orchard, if not large, into a poultry yard when the trees become of bearing age. If pigs are allowed to run in the orchard and eat up all the injured fruit as it falls, then they will prove almost equally as serviceable as chickens. Another method is to plant the trees on the edges of brooks or ponds, so that the branches shall hang over the water. Still another is to have the ground closely paved with large flat stones or shells around the trees. As plums are always picked from the trees, and not from the ground, none of the above plans will interfere very much in gathering the fruit. I could give many other successful plans for preventing the fruit from being injured by the curculio, but must now turn my attention to giving descriptions of some of the finer varieties of plums.

The General Hand is a handsome, very large, golden-yellow plum that is supposed to have originated near Lancaster, Pa. The fruit is of a roundish oval shape, and frequently marbled with greenish-yellow. It is a showy, attractive looking plum, sweet and moderately juicy, and of fair quality; ripens in September. It succeeds better in New York, Pennsylvania, and in some of the Gulf States than it does at the West or North.

Wild Goose—This is proving quite a favorite in many localities, but especially in places where it has been considered difficult to grow the ordinary varieties of plums. It has been heralded throughout the length and breadth of the country as being a "curculio-proof" plum. Though this is not strictly the case, yet it appears in many places to be less attractive to that little insect, either on account of its thicker skin or something distasteful in the fruit. The wild goose is of small or medium size, round, of a yellowish red color, and ripens moderately early. Though it is excelled in quality by some other plums, yet, as it succeeds so generally throughout the United States, and even in Wisconsin and Minnesota, it will probably continue to be a favorite.

The Richland is a plum that is not very widely known. The fruit is of medium size, of a purplish red color, tinged with blue, of oval form, and of quite good quality. It ripens in August, at about the middle of the plum season. It is grown for either market or table use, and thus far mostly within the Middle States.

Pond's Seedling is one of the largest and most beautiful of plums. The fruit is of oval form, skin of a yellow color, profusely dotted with red, and with a white bloom. It ripens in September, and is of moderately good quality. It is of English origin, and has not yet been very generally tested, but thus far has proved quite promising where grown.

Coe's Golden Drop, Imperial Gage, Washington, and Yellow Egg are some of the largest, best, and most delicious of yellow plums, and are very general favorites. The first is quite a late variety, and the second moderately early. Lombard, a reddish purple plum, is popular on account of its great hardiness at the far North.

STRAWBERRIES.

The following account of the opinions given at the last meeting of the American Pomological Society was given to the *Prairie Farmer* by the horticultural Editor, Mr. T. T. Lyon.

P. T. Quinn, of Newark, N.J., commenced by saying that his views, as to the proper method of growing strawberries had undergone a change within the last dozen years. He is now of the opinion that the best of soil and cultivation is requisite for the production of fine berries and profitable crops.

Until recently he had planted in summer, but now thinks spring planting more profitable. He gives clean culture till the middle of September, and then mulches for the winter, raking off the covering in spring. He omits the use of horse power in cultivation during the year of fruiting, for the reason that the feeding roots come too near the surface, and would hence be too much disturbed by the cultivator.

He stated that he had produced over 170 bushels from a single acre. It is his practice to test the promising, new varieties. All things considered, the Charles Downing is his favorite, though Boyden's No. 30 (Seth Boyden), is popular with dealers. His last crop netted him fourteen cents per quart.

Dr. Hexamer, of N.Y., dwelt largely upon the value and importance of irrigation. He concurred with Mr. Quinn in a preference for spring planting, but thought Wilson one of the best shipping berries. For amateur planters he recommended the use of potted plants. In response to a question by a member, he remarked that the Triomphe de Gand was one of the finest of shipping strawberries.

The consideration of the several varieties served to bring out prominently the fact that nearly or quite all varieties are more or less local, so far

as successful cultivation is concerned; a very few only proving satisfactory over an extended range of territory.

Agriculturist was not generally thought worthy of a place in the catalogue.

Black Defiance was commended as "best" for those who want a first-class large berry.

Captain Jack, one of the best market berries. Quite prolific.

Charles Downing, one of the best of all berries for general use. Said to be liable to blight in some places.

Col. Cheney, good, if well fertilized.

Crystal City, a valuable early berry. Commended in Georgia, but not as good for shipping. Said to be poor and small on clay.

Crescent is very well able to take care of itself, has great vitality, is profitable for a near market.

Cumberland Triumph, one of the best, popular everywhere. A good shipping berry in Ohio; holds its size till last picking.

Downer's Prolific is being replaced by more recent and better varieties.

Duchess, an early berry; does well grown in hills.

Duncan, early and of very fine quality.

Forest Rose, under ordinary culture has not realized the anticipations of growers. Its foliage fails and the blossoms are tender.

General Sherman, poor in quality.

Glendale, generally regarded as worthless.

Glossy Cone, fails under the influence of sun and drought.

Golden Defiance, a fine, late variety, for home use.

Great American, variable and uncertain, usually unproductive; very disappointing.

Green Prolific, very sure, prolific and profitable for a near market. Some members suggested that it is no longer needed since we have the Crescent.

Henry Davis, a good amateur berry, does not bear heavy crops, but is of good quality.

Hovey's Seedling, originated fifty years ago, was the first hybrid strawberry of American origin; still retains its quality.

Jenny Lind, little grown outside of Boston and its vicinity.

Jucunda, once so popular, has ceased to be satisfactory.

Kentucky, one of the best market berries in Arkansas, the late market berry of Ohio. It takes care of itself.

Longworth's Prolific, is the great berry of California.

Matilda, generally unsatisfactory.

Miner's Great Prolific, one of the finest and largest of all the strawberries.

Monarch of the West, uncertain, liable to be injured by spring frosts.

Newman's Prolific, the popular berry of Charleston, South Carolina, quality often poor elsewhere.

Nicanor, very early and hardy, some say earlier than Duchess and Wilson.

Pioneer, an early variety and a strong grower.

President Wilder, of the finest quality, under high cultivation, handsome and unsurpassed. It has stood for twenty years as one of the best in form, color and quality.

Prouty, superseded.

Rocky Hill Triumph, same as Cumberland Triumph.

Russell's Prolific, superseded.

Russell's Advance, of good quality; stands the sun well, hardy, soft.

Seneca Chief, little known; of no value.

Seneca Queen, of good quality, productive, uniform in size and shape, a little later than Duchess.

Boyden's No. 30 (Seth Boyden), sweet, valuable in some places, especially with abundant moisture.

Sharpless, fruit not good in a wet season; large and prolific under good treatment; quality usually good, misshapen only when overgrown. The Massachusetts Horticultural Society gave it the first premium this year. It is less prolific the first season.

Springdale is very fine for home use.

Triomphe de Gand, the type of high quality, and on suitable soil will give the best results; keeps well.

Triple Crown, of very high flavor.

Victoria (Golden Queen), unsatisfactory.

Windsor Chief, a fine berry.

Manchester, a very promising berry, uniform in size, prolific, as large as Cumberland Triumph; said to thrive on poor soil.

Kirkwood, a vigorous plant, profitable for a near market, precisely like Mount Vernon.

Longfellow, said to be very valuable.

Warren, of good quality, but very uncertain, resembles Seth Boyden.

Cetewayo, one of the strongest growers.

Gypsey, hardy, good quality.

PINCHING MELON, CUCUMBER AND SQUASH VINES.

A practical gardener makes the following important statement: "Last year, as a test of a frequent practice among growers of melons and squashes, I pinched the ends of the long main shoots of the melons, squashes and cucumbers, and left some to run at their own will. The squash plant sent out a single stem, reaching more than forty

feet, but did not bear any fruit. Another plant was pinched until it formed a compact mass of intermingling side shoots eight feet square, and it bore sixteen squashes. The present year, a muskmelon plant thus pinched in covers the space allotted to it, and it has set twenty-three specimens of fruit, the most of which have been pinched off. The pinching causes many lateral branches, which latter produce the female or fertile blossoms, while the main vines only produce the male blossoms. The difference in favor of the yield of an acre of melons, treated by this pinching process, may easily amount to 100 barrels."

HOW TO SECURE HARDINESS IN OUR TREES.

(From Address of President Barry, before the Western New York Horticultural Society).

Hardiness, or the power to resist extreme cold, is generally recognized as a quality of the first importance. When a new variety of fruit or a new ornamental tree or plant is introduced, the first enquiry made is about its hardiness. In such climates as ours, it is the one indispensable quality. What, then, can the cultivator do to promote hardiness? He can do much; first, and above all, our land must be dry, that is, absolutely free from stagnant moisture, either naturally, or made so by underdraining. We all know that plants grown on low, rich, moist lands are filled with watery fluids, which render them peculiarly susceptible to injury from frost. We often see plants on low, moist grounds killed by an early frost, when on adjacent dry ground, only a few feet distant, they escaped. Vegetable physiologists have adopted the axiom, "That the power of plants to resist cold is in the inverse ratio of the rapidity with which the fluids circulate," and "that the liability of the fluids of plants to

freeze is greater in proportion to the size of the cells." That is, the less water there is in the fluids of plants, and the smaller the cells, the greater is their power to resist cold. This is in harmony with all our experience. This is the reason why such destruction has fallen upon Western plantations. I have seen orchards at the West, on low, rich lands, frozen while in full leaf, so that they looked perfectly black and dead. They were full of watery fluids when overtaken by the frost. The Chairman of the Wisconsin State Fruit Committee reports that "the exposed crowns of many of the highest limestone bluffs in that State, from 100 to 400 feet above the adjacent valley, produce as perfect orchards as can be desired, up to latitude $44\frac{1}{2}^{\circ}$, where a large variety of our

EASTERN APPLES AND PEARS

are permanently successful; while in the valley below nothing but the Siberians or Duchess of Oldenburg will stand. This is the experience all over the West, and it is ours only that in our milder climate it is not so marked. In the second place soil must possess sufficient fertility to produce a moderate healthy growth. Trees or plants that are underfed become stunted, and are neither useful nor beautiful. The sooner they die the better. Those that are overfed make a rank, watery growth, which does not ripen, and is not in a condition to resist cold. These extremes are by no means uncommon in the treatment of trees. As a general thing, the starvation process is more common, but it is also very common to apply manure to excess. To maintain trees in a state of health and vigor, yielding their maximum of utility or beauty, requires both care and skill in the application of fertilizers and the treatment of the soil. In the management of fruit trees, over-cropping is a

great and very general evil. A tree overloaded with fruit can neither perfect the fruit nor ripen its wood properly, and in a severe climate is quite likely to succumb to a degree of cold, which, under proper treatment, it could have resisted perfectly. It is safe to say that millions of trees are annually ruined in this country by over-crops. The grape is very sensitive in this respect; if overloaded, the fruit will not color, nor will the wood ripen. It is not uncommon to hear people complain of their grapes not ripening and their vines being killed, and ascribing the trouble to every cause but the right one, over-cropping. This is an error committed not by novices only. A great many trees and plants are killed by kindness, too. New plants, costing a high price, are very apt to be stimulated by manure and water, so that, instead of making a moderate, well ripened growth, they are forced, as it were, and come out dead in the spring. I have seen many such cases. I will only refer to one on our own grounds as

A FAIR EXAMPLE.

There was a large bed of the new *Hydrangea paniculata* on the lawn; the plants were set close, and it was thought that a surface dressing of manure and plenty of water would assist their flowering, which takes place late in the season, and generally when it is dry. This treatment was well enough, but they got too much of both manure and water. They did not ripen either roots or tops, and nearly all were dead the following spring, while those in other parts of the ground left to themselves were not injured in the slightest degree. I will mention another instance which has frequently arrested my attention, as showing the importance of well-ripened wood. The varieties of *Golden Arbor Vitæ* have proved so liable to be injured in winter,

that their culture with us has been almost abandoned. Four years ago a couple of them were planted on a piece of rock work, and these have escaped the slightest injury, even during the last severe winter. They make a moderate growth, but it is healthy; the color is perfect, and they seem quite at home. In every other situation they have failed. It is because the roots running among the rocks, free from stagnant moisture, acquire perfect ripeness, as do the whole plants. I believe that by special means of this sort we may do much to increase the hardiness of many beautiful trees and plants only half-hardy. Much injury is done in city gardens by the excessive use of water, not only to the lawns, but to trees and plants, and to health as well. Ripeness, then, is essential to hardiness, is

THE SOURCE OF HARDINESS,

and the cultivator should never lose sight of this. Thanks to our climate, it is not so difficult to secure ripeness here as it is in some parts of our country. In reading a report from Minnesota, a few days ago, the writer stated that they had scarcely any autumn, but passed at once from the season of growth to severe frosts. Here our autumns are splendid, with rarely frost enough to kill flowers until about the 1st of November. The early frost is the exception, and it is generally so light as to do little harm, so that generally it is our own fault if our trees and plants are not well ripened. The generally acknowledged superiority of nursery trees grown in Western New York is due mainly to the perfect ripeness they acquire. The means to be employed to secure ripeness and hardiness may be very briefly summed up as follows:—

First—A dry soil, absolutely free from stagnant moisture.

Second—Sufficient fertility only to produce a moderate and healthy growth.

Third—Such treatment of the soil as will encourage growth early in the autumn. In the case of tender plants these precautions will be all the more necessary.

Fourth—In the case of fruit-bearing trees and plants, avoid over-cropping.

NOTES ON NEW VARIETIES OF POTATOES.

Lyman Wall, of Webster, N. Y., writes to the *Rural Home* an account of the observations he has made upon the quality and productiveness of some of the new varieties of potatoes. In his report, Mr. Wall makes quality and productiveness the two main considerations, the next thing being hardiness, shape, size, color, etc. He says :

“Several years ago I discarded the Early Rose, and grew the Early Vermont, for an early potato. I think the Vermont far preferable to the Rose. It is more productive, less liable to scab, full as early, and of better quality. Beauty of Hebron, not quite as early as the Vermont. Quality slightly inferior. Have raised the Early Ohio two years and shall discard it. Am satisfied that in some sections it is a first-class early potato, but with me it is inclined to scab, and yields about half as many merchantable potatoes as the Vermont.

“The Ontario, a new seedling originated by H. H. Doolittle, is the best early variety I am acquainted with. In size, shape, quality and productiveness, it is as near perfection as anything yet introduced.

“The Belle, a new seedling of the Early Rose, is one of the best medium early varieties. Ripens about three weeks after the Vermont, is productive, and one of the best table potatoes I have ever eaten.

“The Mammoth Pearl, a large white potato of good quality and very productive. With ordinary field culture it produced this season, at the rate of 210 bushels per acre of large fine potatoes.

“The Magnum Bonum is one of the best very large potatoes I ever saw. Season about the same as the Belle. It is a seedling of the White Peach-blow, which it resembles very much in shape and color. The only objection is deep eyes in the seed end, the other eyes are few and of ordinary depth. For poor land I think it preferable to any other variety. Potatoes invariably large. On the poorest soil capable of producing only one in a hill, that one will be large.

“Have raised Burbank Seedling for two years, and shall discard it. During four days' attendance at the Western New York Fair, I talked with several hundred farmers about the different varieties of potatoes, and nine-tenths of them condemned the Burbank. But I find no potato so poor but some one will praise it, and none so good but some will condemn it.

“For a late potato I know of nothing equal to the White Whipple, originated from the Whipple. No potato has given such universal satisfaction to customers as the Whipple. In spite of its objectionable color it has won favor, and no potato is more sought after in the Rochester market.

“The White Whipple is equal in every respect, and has the advantage of being white, very much resembling the old White Pinkeye. When on exhibition at the fair this fall, many old farmers declared it to be their old favorite, the White Pinkeye.

“We commence eating it at digging time, and eat nothing else till potatoes grow again. It is not as late as the Peachblow, but ripens before frost. I planted half an acre this season, the

17th of June, and they were ripe and ready for digging the 1st of October, making a very good crop of fine large potatoes.

"Wall's Orange is another new potato originated by me from the Whipple. It is of a reddish orange color; in shape, size, and productiveness it resembles the White Whipple; when cooked, not quite so firm as the Whipple, but dry and mealy, and of the very best quality. From 25 lbs. of seed, I this year, with ordinary culture, raised 35 bushels of first-class potatoes. For quality and productiveness I know of no varieties equalling the White Whipple and Wall's Orange. They are about the strongest growers I ever saw, vines completely covering the ground, and as nearly bug-proof as possible. Growing in my experimental field beside other varieties which were bugged several times, they took care of themselves, and were the last to succumb to the drouth.

"I have a quantity of selected seedlings, one, two, and three years old, that I shall thoroughly test before putting on the market. My seedlings are from seed balls of Whipple and White Whipple. Among all the varieties grown by me for several years, the Whipple and their seedlings are the only ones producing seed balls. Other varieties blossom freely, but fail to produce seed. I have been investigating the subject this summer, and will give the result for what it is worth, hoping that others better qualified than I am will give us the truth in the matter.

"I noticed the bumble-bees were very busy apparently collecting honey from the blossoms of the Whipple, and paying no attention to the blossoms of other varieties growing near them. I came to the conclusion that the blossoms of the Whipple contained honey, and the other varieties did not, and that the bees carried the pollen from flower to

flower, thus fertilizing them and producing a large amount of seed. I think I could have gathered a bushel of balls from an acre."

FASHION VERSUS TASTE.

Single buds of Gen. Jacqueminot Roses were sold on New Year's Day in New York for from two to four dollars, and even at these extravagant prices the supply fell short of the demand, so that one wealthy young gentleman considered himself fortunate to be able to procure the last four Roses of New Year's Day for fifty dollars, rather than appear before his bride without a gift of Rose-buds.

Is this an indication of an increasing taste for flowers? We think not, and if it were, it would be but a doubtful compliment to the æsthetics of our fashionable society if it had required all this time to discover the beauties of the Rose.

Pleasant as is the custom of sending one's New Year's compliments to his lady friends in the shape of fresh flowers, the fact that this year it cannot be done in any other form than Gen. Jacqueminot Roses is no more a sign of refined taste or individual preference than is the wearing of one-button gloves or the crinoline so soon as fashion dictates.

Violets and Lilies of the Valley are also admissible, and, strange to say, a bunch of Daisies—particularly when they are called "Paris Daisies"—may find an honored place in the most fashionable parlors, while a few years ago the offering of a bunch of Daisies to a lady would have been considered an insult. Is it taste that rules the queenly Camellia and sweet Orange blossoms out, and Daisies and Tulips into fashion? Even the graceful Smilax, decreed fashionable by the whim of an opera prima donna, is losing caste in society, to be supplanted by

Fern leaves, which should never have been ruled out.

These various freaks in floral fashions may add something to the stock of botanical knowledge of our city belles, but taste—a clear perception and appreciation of beauty and excellence—is rarely developed by fashion, which often takes retrograde steps and brings faulty modes and ill-shaped forms into common use, which, by their frequent contact, rather dull the taste for real art and beauty. A fine taste is not created by a freak of fashion; it is either born with us or is the result of careful study and high culture.—*American Garden.*

THE FARMER'S FRUIT GARDEN.

I contend that every prosperous farmer owes it to himself and to his family to supply his table with all the desirable and wholesome luxuries which his farm, under ordinary cultivation, is capable of producing, and to supply it bountifully, and failing to do so he fails in his duty to his family, and can not reasonably expect his sons and daughters to grow up contented with their lot. Children brought up on a farm are deprived of many privileges enjoyed by those brought up in the city, and should be provided as compensation with those which the farm is capable of producing. The farmer's boy or girl, visiting town, sees upon the green-grocer's stand almost every species of fruits and vegetables, and know that these desirable luxuries are grown on soil similar to their father's, and if they are continually deprived of such luxuries, what wonder that they are discontented.

None of the products of the soil are more enjoyed by children than fruit, and there is no portion of the homestead farm that are longer remembered or more fondly cherished, than the fruit garden. I remember, when a mere infant, visiting an uncle at Red-Hook,

Duchess county, and the only thing about the place that made a lasting impression on my mind was a garden of plum trees, loaded with luscious blue, red, and yellow plums. I pity the farmer's son who grows to manhood's estate with no such cherished spot to chain him to the parental home.

Having said so much to prove the value of the fruit-garden to the farmer's family, I will say but little about its character. In the first place, it should be ample. No farmer is so pinched for room that he can not afford space for a liberal fruit garden. A large garden can be cultivated in less time than a small one, as it affords room for using a team to advantage.

Then plant liberally of every desirable species, so liberally that there will be an abundant supply for the family without using defective fruit. A well-to-do, independent farmer should put no second-class products of the field, orchard or garden upon his own table. Throw wormy or rotten fruit to the pigs, but never offer it to your children.

Plant enough of the hardy, vigorous, productive varieties of the various species to insure a supply in unfavorable seasons, and then plant some of the higher-flavored, that require more nursing, so that you may have some of the best. I would say, plant none but those of highest quality, but should that be done, unless the farmer is an expert, there would be seasons when there would be no fruit, or at least an insufficient supply.

Plant in the fruit garden, pears, peaches, plums, apricots, cherries, quinces, grapes, gooseberries, currants, black-berries, raspberries, and strawberries. Cultivate the surface well until the trees are well in bearing, and then you may cease ploughing the trees, if you choose, but never cease to manure them. The small fruits, of course, must

always be cultivated. A bearing fruit-garden would afford a more delightful promenade for the family, if kept in grass, closely cut, but it would soon cease to be a pleasant resort if allowed to decline in fertility, and consequently in the quality of its fruit.—*American Rural Home.*

HARDY SHRUBS.

BY ANTOINE WINTZER, WEST GROVE, PA.

Persons who have places in the country sometimes desire to plant a few shrubs that will thrive and bloom without too much nursing. To assist them in their efforts, I will give a list and description of about a dozen of the most desirable varieties for general culture.

In the first place a few suggestions about the planting and treatment of hardy shrubs may not be amiss. They can be planted at any time from October to May, when the ground is not frozen or is not too wet.

Now allow me to say a few words about the pruning of shrubs. This is a very simple affair. All shrubs that bloom in spring, or early summer, should *not* be pruned in winter or spring unless they have been newly planted; in this case they should have their tops shortened. When shrubs grow too many shoots, a number of them should be cut out entirely in February or March. If they grow too tall the tops can be clipped in summer, after the plants are through blooming for the season. But *Altheas* and *Hydrangea Grandiflora* should always be cut back in winter or early spring, because they bloom in late summer on the young shoots, while the *Spireas*, *Deutzias*, *Weigelas*, and all shrubs that bloom in May or June, must have shoots of the past season's growth to produce their flowers.

Weigela Rosea.—This beautiful Chinese shrub is one of the most effective

plants in the lawn. It produces its beautiful rose-colored flowers in June in the greatest abundance. The plant grows to the height of six or eight feet, and will thrive in any soil.

Weigela Nana Variegata.—This is another fine plant. It is desirable both for its flowers and its beautiful foliage, which is green in the centre and white on the outside of the leaf, and retains its distinct color all summer. The flowers are a beautiful blush in color, and it would be hard to find a more charming looking plant than this when in full bloom.

Hydrangea Grandiflora.—This fine shrub was introduced into this country from Japan. It is as hardy as an oak. It begins to bloom in this section (latitude of Philadelphia) about the latter part of July, and the flowers remain on the plant until frost. When the flowers first open they are pure white; after a few weeks they become rose-tinted. They are produced on the ends of the young shoots in large panicles, which are a foot or more in length, and good bushes will grow from 50 to 150 of these immense heads. This plant should be trimmed every year, at any time from November to April. If you want large flowers, prune sharp; if smaller bloom is preferred, prune light. Plant it on the lawn in a sunny place (for this variety does not require shade), keep the sod from growing around the roots, and give it a surface dressing of stable manure in the fall, and you will have a plant of which you will be proud. It will flourish for a lifetime with decent treatment. It will grow from seven to eight feet high.

Viburnum Plicatum.—This is a beautiful shrub of the Snowball family. It produces its flowers in pure white bunches like the old variety, but the plant has firmer and thicker foliage and a more erect habit of growth. It blooms

in spring, and requires but little pruning at any time.

Spirea Reevesii.—A fine plant for the lawn. The bush, when in bloom, is charming in the spring of the year, when it is one mass of white. The leaves are small, and the plant has a half-drooping habit, which gives it a graceful appearance.

Spirea Thunbergia.—One of the most graceful hardy plants we have. Produces small white flowers early in the spring. The foliage is very small, and the bush remains green until late in the fall.

Cydonia Japonica (Japan Quince).—This is a very showy bush early in the spring, when it is covered with its bright scarlet blossoms. It bears clipping, and can be kept in any desired form; it also makes a very nice hedge. There is also a light colored variety, which is fine when planted in contrast with this.

Deutzia Crenata.—This is one of the best *Deutzias*. Flowers double, rose-colored, and produced in great numbers. It blooms in June. The bush grows four to six feet high, and will do well in any soil.

Deutzia Gracilis.—This is a more dwarf-growing variety than the preceding. Flowers pure white, single. A nice plant to force for winter flowers.

Hibiscus Purpurea Pleno (Purple Althea).—This well-known shrub blooms in August. Altheas are fine plants when well kept, and all that is necessary to keep them in good condition is to clip them back every fall or winter. This will not affect their bloom, as they flower on the young wood. There are several good varieties beside the above, such as *Double Rose*, *Carnation Striped*, *Double White*, *Variegated Leaved*, and several others. They can be used as hedge plants or for ornaments.

Syringa Vulgaris (the common purple Lilac).—A list of hardy shrubs would hardly be complete without this old favorite. There are several newer varieties, but the old purple is as good as any. It thrives in any soil, and the plant requires no pruning—only an occasional thinning out of surplus shoots.

Philadelphus Coronarius Nana (Dwarf Mock Orange).—This is worthy of a place in any lawn. The plant blooms in late spring. The flowers are pure waxy white and delightfully fragrant. The bush grows nice and compact.

Berberis Purpurea (Purple Barberry).—This is a good plant for the lawn, and it will also make a fine hedge. Its flowers are yellow, produced in spring, but its beauty is in the rich purple foliage, which remains on the plant until late in the fall. It should be clipped every year in fall or winter.

The above make a small collection of hardy shrubs that will do well in any soil that will grow grass, and can be bought at a reasonable figure from any good nurseryman.—*Farm and Garden*.

CELERY.—Celery is a vegetable which apparently receives but little attention from the public, and still the trade in this article amounts annually to many thousands of dollars. While many use it for its medicinal qualities, its well-known effect on the nervous system causing it to be highly prized, others and by far the majority of consumers consider it a luxury, fit only for the wealthy. Few are aware that fully one-third of the celery of commerce is thrown away as useless. All the coarser parts—the outside stalks and the greener portion of the stock—all, in fact, that is unfit for the celery glass, can be utilized by cutting into short pieces, cooking and serving in precisely the same manner as asparagus. All housekeepers who try it never after waste any of their celery.

PERSIAN CHAMOMILE OR INSECT POWDER.

"How is the Persian insect powder used to destroy flies, mosquitoes, bed bugs, etc. ? I have tried burning some but the fumes did not kill flies."

A teaspoonful of pure "Persian Chamomile" heaped in a little cone and burned in a medium sized room, that is not ventilated during the burning, will kill every fly in it. If it fails to do this the powder is not genuine. To test its purity, put a little in a bottle with a dozen flies ; when the bottle is closed they will go into spasms and die almost instantly if the drug is what it should be. "Persian Insect Powder," like other things, is sometimes adulterated ; it will also lose its strength if kept loose too long. Druggists mix it with other ingredients for various purposes. Borax is a valuable addition when cockroaches are to be disposed of, but for flies, mosquitoes, and bed bugs, the pure powder must be used. It costs from seventy to eighty cents a pound, has a bright, buff color, is light, burns readily, and gives a rather pleasant tea-like fragrance. It is the powdered leaf of a harmless flower growing in Caucasian Asia, where for centuries it has been used to keep the insect world in subjection. It acts on their breathing apparatus, evidently producing vertigo, respiratory spasms and paralysis, but is perfectly harmless and not particularly disagreeable to human beings. Of course a little curl of blue smoke can't be expected to kill the flies over all creation or even in a large airy space. It will weaken the ambition of all those which come within its influence, but to produce death the effect must be concentrated.

In rooms where windows and doors are opened the burning powder will keep out unwelcome insect intruders. In a house protected by screens, the

flies already in may be most conveniently disposed of by using the dry powder with an insect gun, which costs about twenty-five cents. Puff the powder into a close, warm room, until the air is filled with it, then shut the door and return in half an hour. If every fly in it is not either dead or dying, throw away your powder and send to a reliable dealer for that which is good. Pure "Persian Insect Powder" never fails in its effect.

For bed bugs puff the powder with the insect gun into all the cracks and crevices where such vermin harbor ; leave the room undisturbed for a few hours, closely shut meanwhile, they will walk out and surrender at discretion ; a semi-annual application will prevent all further trouble.

Dust your house plants, your pet dog and your poultry with insect powder, but don't undertake to kill spiders or you will be disappointed.—*Prairie Farmer*.

CATCHING CURCULIOS.

It is now over fifty years since I first learned when a boy to catch curculios by jarring on the spread sheet, and since that I have tried several modifications. Although I have published the mode which answers best, I find some of our best and most intelligent fruit growers still pursue old and inefficient means. Stout muslin about 6 by 7 feet is stiffened with light rods along the opposite edges, and these are kept apart with a cross-rod at the middle. This cross-rod is a little shorter than the width of the muslin, so as to leave the muslin a little slack and concave to hold the insects. Iron plugs are set in the trees, if small, or in the larger limbs if large, on which a single blow with an axe brings down every beetle. This is incomparably better than any padded mallet, or any other imperfect pounding. The operator

carries the sheet on his left arm, first to one side of the tree and then to the other; never has to stop, works rapidly and it costs almost nothing to keep the trees clear.—JOHN J. THOMAS, in *Green's Fruit Grower*.

NEW VARIETIES OF GRAPES.

Several persons deserve much praise for their success in the production of new varieties of grapes. Years ago I fully published my observations on the thirty-nine varieties produced by Mr. Rogers, of Salem, Mass. And what I said of them has been fully sustained. They are such rampant growers, so hardy, that the continent over they are known and valued. I would as soon part with my fruit-yard as let go Rogers' No. 3, that feasts me every year; or No. 13, like No. 3, but a little later; or No. 15, that honored number. Another successful man has come on the field with newer varieties that will satisfy those who dislike the stronger flavors of the Rogers. It is James H. Ricketts, of Newburgh, N. Y., who presents us with Lady Washington, Jefferson, Naomi and Bacchus. These are probably valuable in about the order I have placed them.

The Lady Washington, when grown for agricultural fairs, is a grape three-quarters of an inch in diameter, white, with a rusty cheek, somewhat transparent, with a golden greenish tint; bunch two-shouldered, six or seven inches long by five inches through the shoulder. As ordinarily grown it should be a third less in size, and yet be one of the most magnificent American varieties, equalling European grapes in size and appearance. So far its flavor is unexceptionable. The Jefferson is a red grape, claimed to be a cross of Concord and Iona, having the form of Iona, and the hardiness of the Concord. A full-grown typical bunch

is six inches long by six inches through its two shoulders; berries about five-eighths of an inch in diameter. As ordinarily grown it should be half an inch in diameter, and five inches long and wide in the bunch, or about equal to bunch and berry of the Isabella. In flavor it is much like Iona. Those who like the somewhat indefinite sweetness of Delaware and Iona, as compared with the higher flavored American grapes, ought to be satisfied with this, for it is the popular taste to eat such grapes.

Next I name the Naomi, because I believe it is a grape that will fully please me. I do not completely fancy a mere sweet bag of a grape, and as this is a hybrid of the Muscats and Clinton, it has shape and flavor enough. Mr. Vick says: "I have fruited it about ten years, and pronounce it one of the most magnificent grapes for the table that ever grew." It is a white grape, berry medium, oval, greenish yellow, ruby cheek, in a large shouldered bunch. I have not eaten it, and hence can only say that it is much praised by those who have seen and tasted it. The Bacchus is a seedling of the Clinton. The Clinton is not a favorite of mine, though it is of most people, but it is hardy and productive. The Bacchus is a peculiar shaped grape in its bunch, reminding me of an English grape called the Eldred; that is, the bunch is long, and nearly as large at the bottom as at its slightly shouldered top, measuring, when not overgrown, five or five and a half inches long by two and a half inches at top and two inches at the bottom. This is a smallish bunch. The Eldred is similar in shape, and nine to eleven inches long. The flavor of the Bacchus is acid and Clinton-like. I am now no believer in the use of wine or other alcoholic liquors, and I repent of all I ever wrote and said or did for wine making.

Hence I have nothing to say of its wine qualities, but Bacchus is a fair table grape.

As I close this article, I can but invite the grape-lover to the new feast of grapes so amply provided for him. Certainly they claim a fair trial, and if they have won their high esteem, in the face of a taste educated by so many years of excellent kinds, they are a step in the onward, creditable to their originator, and one that no grape-grower can neglect.—S. J. PARKER, M.D., in *the Country Gentleman*.

THE ONTARIO POTATOE.

This potato originated with H. H. Doolittle, the originator of the Doolittle raspberry. We have tested it thoroughly, and find it all he claims below. He says: "The smoothness or shallowness of eyes is the first striking peculiarity. Its shape is flat and oblong. Never grows together or knots up or deforms. Its skin and flesh are white, cooks dry, but avoids the fault of all shelling off and falling to pieces when boiled, and its quality such that the usual expression is, "The best I ever ate." In size, it reaches to $1\frac{1}{4}$ pounds, but the largest are never deformed.

As to earliness, one testifies to planting "17th day of May, and commenced eating dry ripe potatoes from them the 3rd of July and a good yield." One calls them two weeks and another ten days earlier than the Rose. One's enthusiasm may lead him to mistake the effects of blight or some local cause in ripening a hill or a rod square several days in advance. But my own testimony is that having planted this seedling for four years alongside of the Early Rose and Extra Early Vermont, the whole plat of the Ontario shows a general earlier deadening of the tops, so as to be noticed from a distance.

With this earliness it combines the

best keeping qualities for summer use. Many think that this heaviness and solidity as an old potato is sufficient to commend its universal growth.

Yield.—From the tiny seed five years ago it has grown yearly in size and yield till this year on one-fourth of an acre of ordinary soil, without manure this year or last, or fertilizers of any kind, there were ninety-five bushels, taking about thirteen hills to make a bushel—showing a native vigor and capacity of yield unsurpassed in late years.—*Green's Fruit Grower*.

TREES IN CITIES.

An interesting paper has been recently read by Dr. Phene at Edinburgh on the benefits to be derived from planting trees in cities. Among the beneficial results to be attained are, he stated, the relief to the optic nerve through the eye resting on objects of a green color. Just that which is effected by the use of green or blue glasses in strengthening and sustaining the power of sight is attained, or, at any rate much aided, by the presence of green in nature; and in streets the only method to produce this result is by planting trees. It was pointed out by the author that wherever opportunity exists nature provides green and blue (the latter being the same color minus the presence of the yellow) and that the absence of color produces snow blindness, and in tropical calms, where the ocean presents only a white reflected light from a uniform glassy surface, reduced optical power soon follows a long continuance of the absence of blue color, which becomes immediately apparent on motion of the waves. So in the streets, to the occupants of houses having a northern aspect, the glare of the reflected light is injurious; but the effect would be much modified by the coolness to the eye, produced by the green trees. In ancient surgery, persons

of weak or declining sight were advised to look at the emerald. In the old style of building, the streets being narrow, were both cooler, from the sun not being able to penetrate them with direct rays, and less subject to noxious exhalations from the purifying effect of the searching air to which the narrow streets were subjected, so that while there was no space for trees, there was also less necessity. Wide streets, on the contrary, are hotter, and require the shade of trees to cool them; and, as is the case in London, which has so far done without trees in its streets, it was pointed out that not only the compulsory width of modern streets, but also the enormous increase in metropolitan buildings render every sanitary question one of importance; and the chemical properties of trees, as shown by experiment, give an important standing, irrespective of ornament or the pleasure they produce. Some of Dr. Phene's experiments on this subject have extended over a period of 30 years, and he it was who first tried the planting of trees in the streets of London. Since the reading of a former paper by him at Manchester, where the importance of the subject was pointed out, a number of streets in wealthy localities have been planted, and even Trafalgar Square, in the heart of the metropolis.—*Michigan Farmer*.

WHITEWASHING TREES.

Do not be afraid to whitewash fruit trees of all kinds. It looks neat, fresh and nice; and it not only destroys insects and their eggs, but the white coat on the body of the tree reflects the heat and keeps the inner bark and sap vessels from being scalded and blighted by the rays of the sun. Every fruit grower knows by experience how injurious the blaze of the sun is to the limbs and trunk of a tree.

A thick coat of whitewash will be

much better protection than straw, boards or other materials, under which mice and bugs and worms can harbor. These destructive pests can be completely kept away by using sulphur in the whitewash. The way to mix it is to take for each peck of lime four pounds of flour of sulphur. Mix the lime and sulphur together in a barrel and pour in a bucketful of hot water. Cover the top of barrel while the lime is slacking, so as to retain all the fumes of the sulphur. When slacked add sufficient water to make a thin whitewash. Put this wash on the trees with a broom or a brush, taking care to keep the sulphur well stirred up, as it will be found to float like a scum of oil on the surface of the water.

This lime and sulphur wash is good for grape vines and posts and stakes in the vineyard. When properly made and put on a strong smell of sulphur will be detected several feet from the trees and vines during the whole summer. These fumes are caused by the slow combustion or oxidation of the sulphur when sulphurous acid gas is formed, which is certain death to all the low order of animal and vegetable life. This oxidizing action of sulphur is the reason why it is used to dust grape berries and leaves to check the spread of *oidium*, mildew, grape rot and other fungoid diseases, because as soon as the sulphurous oxide gas is formed and pervades the surrounding atmosphere, all these fungus growths are instantly killed. So, too, would be all insect life, and on a large scale, so, too, would be all animal life.

The use of sulphur as herein recommended, in combination with lime, in a whitewash, has been found efficient and valuable by several who have tried it; it is hoped it will be more generally adopted by all orchardists and grape growers.—*Farmers' Home Journal*.

THE PLANTING OF THE APPLE TREE.

WM. CULLEN BRYANT.

Come, let us plant the apple-tree,
Cleave the tough green sward with the spade :
Wide let its hollow bed be made ;
There gently lay the roots, and there
Sift the dark mold with kindly care,
And press it o'er them tenderly ;
As 'round the sleeping infant's feet
We softly fold the cradle-sheet,
So plant we the apple-tree.

What plant we in this apple-tree ?
Buds, which the breath of summer days
Shall lengthen into leafy sprays ;
Boughs, where the thrush, with crimson breast,
Shall haunt and sing, and hide her nest ;
We plant upon the sunny lea
A shadow for the noontide hour,
A shelter from the summer shower,
When we plant the apple-tree.

What plant we in this apple-tree ?
Sweets for a hundred flowery springs
To load the May-wind's restless wings,
When, from the orchard row, he pours
Its fragrance through our open doors ;
A world of blossoms for the bee,
Flowers for the sick girl's silent room,
For the glad infant sprigs of bloom,
We plant with the apple-tree.

What plant we in this apple-tree ?
Fruits that shall swell in sunny June,
And redden in the August noon,
And drop, when gentle airs come by,
That tan the blue September sky ;
While children come with cries of glee,
And seek them where the fragrant grass
Betrays their bed to those who pass,
At the foot of the apple-tree.

And, when above this apple-tree,
The winter stars are glittering bright,
And winds go howling through the night,
Girls whose young eyes o'erflow with mirth
Shall peal its fruit by cottage-hearth,
And guests in prouder homes shall see,
Heaped with the grape of Cintra's vine,
And golden orange of the line,
The fruit of the apple-tree.

FLORICULTURAL.—Every garden should have a clump of lilies. They are easily cultivated, and require but little attention. The bulbs should be planted five or six inches deep. In fall, cover them with coarse manure. The following are desirable varieties : *Auratum*, the famous gold-banded lily from Japan, which only a few years ago sold at \$5 each ; *Candidum*, the old, common white, but still one of the best ; *Brownii*, trumpet-shaped, rich purple on the outside, cream-white within ; *Lancifolium album*, white ; *Rubrum*, white and red ; and *Eximium*, large white flower of exquisite shape.—*Libby's Flower Garden*.

HORTICULTURAL NOTES.—A vineyard of 50 acres in New Jersey, in 1880, marketed 80 tons of grapes, and in 1881 a larger amount. Estimating the grapes to be worth three cents per pound at the vineyard, the income from the 150,000 pounds would be \$4,500, or \$96 per acre, with less than half the labor required to grow an acre of wheat or corn.

PROPORTION OF FARMERS.—The last report of the Commissioner of Agriculture shows that 7,600,000 persons in the United States are engaged in agricultural pursuits. The total value of farms and farm implements is \$13,461,200,438, or two-thirds of the productive wealth of the nation. The value of farm products and live stock for 1878 was \$3,000,000,000 against \$2,800,000,000 of mining and manufacturing products. Thus it appears that only a majority of the adult population of the United States is engaged in agriculture, but more than one-half the wealth of the Union is invested in that industry.

PAPER BAGS FOR GRAPES.—Having read with considerable interest the writings of horticulturists in reference to protecting grapes with bags while young, I tried the experiment. Having less than two dozen young vines, I shall say nothing of the cost or trouble of bagging grapes. My vines are rather close to the hen-yard, and I have always had trouble in this direction. The hens have invariably destroyed all the grapes before they were quite ripe, and thus caused me some annoyance. I saved all the paper bags that came into the house, and after the grapes were formed I commenced bagging them, and kept at it until they were almost full grown. Bagging may be an effectual remedy for all the other ills which grape flesh is heir to, but I have found it a perfect remedy for all interference on the part of poultry. I believe that grapes will ripen just as well, if not better, in strong paper bags as otherwise. They will ripen as evenly, and if carefully handled will retain the same beautiful bloom, which is the greatest charm of a table grape. I have grapes growing in bags, and not bagged at all, upon the same vine. I am satisfied that it is a good thing.—F. K. M., in *Country Gentleman*.

THE Canadian Horticulturist.

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[No. 8.

THE BALSAM.

The beautiful colored plate which adorns this August number will illustrate much better than any description the improvement that has been made in the form and coloring of this beautiful flower.

It is a tender annual; hence in our climate it is desirable to get the plants well started in the house or in a frame, so that they can be planted in the open border when all danger from late frosts is over, and come into bloom early enough to enable us to enjoy their flowers before the autumn frosts come and ruin their beauty. As soon as the plants are up and nicely started, they should be transplanted either into small pots or into the frame, and as soon as the roots fill the pots be shifted into larger pots, or, if set out in the frame, moved as often as they begin to become crowded. The soil should be made light and rich, kept free from weeds, and frequently stirred, to secure a strong, healthy growth and abundant bloom. They may be flowered in pots if desired, and grown in this way they make handsome window plants or ornaments for the verandah. Our hot

summer weather is much better suited to the cultivation of this popular flower than the cool, moist climate of England, so that with suitable soil and little care we can grow them in the greatest perfection.

The plants can be pruned to any desired form, either to a single, straight stalk, or with three or four branches. Sometimes they incline to throw out so many branches that if all are allowed to grow the flowers would be hidden. It is better to cut away the superfluous branches as they start into growth, and leave only enough to display the flowers to the best advantage. Thus grown, the plant, when in full bloom, is in itself a beautiful bouquet. The cut blooms show to best advantage when arranged in a saucer of water, or of moistened sand, and in this way make an attractive table ornament. Florists find these double flowers, and especially the double white, very useful in the formation of crosses, wreaths and other floral designs. These double flowers have attained to such perfection of form that seedsmen have named them rose-flowered and camellia-flow-

ered, intending thereby to set forth that they are so double that they resemble these flowers.

There is an opinion current among gardeners that old balsam seed is more likely to produce double flowers than the seed of last season's growth. But we do not know of any experiments that have been recorded which establish this as a fact. Perhaps some of our readers may have made experiments in this direction; if so, they would be interesting as tending to throw light upon this point.

ENGLISH SPARROWS.

Our attention has been called to the article under this title in the May number, page 108, where the eggs are spoken of as being of a *pale blue*. This is not the color of the eggs of this bird as they appear here. The young gentleman, who laughed at the description given, brought us some of the eggs, which are so nearly covered with rusty brown spots as to be almost brown in color, without any perceptible blue whatever.

COMMUNICATIONS.

THE BLACK WALNUT.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

SIR,—It is very gratifying to find so many "anxious enquiries" for information respecting the Black Walnut tree, but at this time of the year it becomes too great a task to reply to all letters on this subject, and, as many persons ask nearly the same questions, the constant writing of answers becomes somewhat monotonous. Will you, therefore, permit me to reply to a

few of the most pertinent questions through the columns of the *Canadian Horticulturist*? By doing which, I think you will oblige many of your readers, as nearly all of my correspondents are members of the Fruit Growers' Association.

1. Can the cultivation of the Black Walnut tree be profitably pursued as a commercial enterprise?

2. Are the Canadian walnuts as good a desert nut as the English?

3. What is the style of growth of the Black Walnut? and have the trees long or short trunks?

4. What kind of soil is most suitable to produce a healthy and vigorous growth?

5. What extremes of temperature will it survive?

6. Is it a rapid or a slow growing tree?

7. What time do the nuts ripen?

8. Can the trees be easily transplanted?

9. I intend planting several acres of Walnut trees. Would you recommend the nuts or the young trees? When—in the spring or fall?

10. Where can young Walnut trees be obtained, and at what price?

11. Where can the nuts be obtained suitable for planting?

12. How far apart should Walnut trees be planted?

13. What preparation of the soil is needed, and what is the best manure for that purpose, if any is required?

REPLY.

1st. There can be no doubt respecting the profitability of an investment in the cultivation of the Canadian Walnut tree, provided an average amount of intelligence is brought into play in the planting and culture of the

same during the first fifteen or twenty years. It can easily be shown that the planting of a given quantity of land with this species of tree will give, in from fifty to one hundred years, a larger profit on the investment than would any other legitimate investment in Ontario.

2nd. The Canadian Walnut is not the same as the nut of commerce, commonly called the English Walnut. The Canadian Walnut tree is the Black Walnut, *Juglans Nigra*. The desert nut known as the English Walnut is the product of the *Juglans Regia*, another branch of the *Juglandacea* family.

3rd. Much depends on the proximity of its neighbours. If the trees are grown near together they will be tall and slender; but if allowed plenty of room, the diameter of the top will about equal its total altitude. The general form of the head will be round, loose and open.

4th. A rich clay soil, worked as deeply as possible.

5th. At this place the thermometer often registers above 90 in summer, and below 35 in winter, and Walnut trees are perfectly healthy.

6th. I have several trees measuring over 24 inches in circumference, 12 years old.

7th. From the middle to the end of October.

8th. The Walnut tree, like most of the nut-bearing trees, are more difficult to transplant than seed-bearing trees.

9th. You will probably be more successful by planting the nuts than with the young trees. Perhaps it would be better in your case to plant both nuts and trees. The nuts must be planted in the fall of the year, and as soon after the nuts can be obtained as possible. Let them be in the ground by the 1st of November. The trees may

be transplanted either in the spring or fall.

10th. I cannot answer this question. Nurserymen having Walnut trees for sale should advertize the fact in the *Canadian Horticulturist*.

11th. Same reply as above.

12th. If you want them simply for shade trees, I should say from 40 to 50 feet apart; but if for planting for timber, I would recommend planting the nuts in rows four feet apart, and two feet apart in the row. Each alternate tree in the row can be removed for transplanting purposes in two or three years, leaving the standing trees four feet apart. In from five to ten years each alternate tree can again be taken out, and also *all* the trees in each alternate row. What is left will then be eight feet apart. In 15 or 20 years, the thinning can again be done, as last mentioned, thus leaving the standing timber 16 feet apart. This will be all the thinning out required.

13th. Let the land be thoroughly subsoiled to a depth of 20 inches. If the land is then in proper condition to grow an ordinary grain crop, no manure will be required. T. B.

Lindsay.

PEACHES AND OTHER FRUIT AT AYLMER.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

DEAR SIR,—Can you tell me what is the matter with my peach trees; see enclosed leaf. I have only to look from where I am writing, and see that all peach trees look yellow, and on closer inspection all the leaves are like the enclosed. One of my neighbour's trees are the same, and not only his peaches, but his pears. In his instance not only the leaves, but the young pears are just the same. It is worse on a splendid, thrifty young Clapp's Favorite. My pears are all right. Can it be the

yellows, of which I have read a great deal lately? Is that big white grub, with the watery end, injurious? He is very frequently met with this year. All the harm that I can see he does is to eat into potatoes and eat strawberry plants off.

Fruit looks around this section on the main very good, so far. Apples, pears, and cherries, splendid; in fact, never saw such a show.

Currants—25 per cent. blasted by east wind.

Gooseberries—Frozen on the top branches, May 23.

Grapes—Badly frozen in exposed positions same night; coming on again now.

Raspberries and Blackberries—Show is good.

Strawberries—Somewhat frozen on May 23, Sharpless worst of all. Jucunda and Wilson only open blows, but Sharpless is so tender that unopened buds froze, added to which it is not nearly as nice a berry to eat as the so-called third-rate berry Jucunda. These are two faults which even its large size and beautiful color of fruit will not compensate. For size and color they are simply magnificent, with me; but a neighbor got some plants from Ohio, and the shape of their fruit is like a man's closed hand; almost in every one can the fingers be traced, with a green seam between, which renders them worthless.

Peaches—None; and if the rain was a little more like the peach crop, we would like it considerably better.

Yours, &c., A. G. E.

The leaves found enclosed with this interesting letter had the appearance of having been injured by the frost. Do not think it to be the yellows.

EDITOR.

PROTECTING GRAPES FROM BIRDS.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

SIR,—I have been much amused and instructed by reading the various subjects discussed in the *Horticulturist*, as also the report of the Entomological Society. I cannot help thinking what a labour it must be to tie paper bags on the bunches of grapes in a large vinery. Would not a sheet, made so as to go over and round under the whole vine, and fastened to the trellis, made of course gauze, be much cheaper in the end, and much handier, than to tie a bag on every bunch, although it would cost more at first? It could be taken down, laid by, and used again for many years; it would allow the passage of air through, and keep out bees or birds, and would save much labour in putting it on, as well as in taking off, as compared with paper bags.

Yours respectfully,

JAMES MILLIGAN.

Orillia, 26th June, 1882.

FRUITS IN MUSKOKA.

Nine or ten years ago, I planted quite a few trees—apples, pears, plums, cherries, etc.—but all with the exception of two crabs, Transcendant and Montreal Beauty, died. Last spring I planted several apple trees, with the following result:—Duchess of Oldenburg, two out of eight were winter-killed; Red Astrachan all alive; St. Lawrence all dead; Snow-apple half killed, and Golden Russet a fourth killed. Last winter was an exceptionally severe one here on trees, and I congratulate myself I have so many alive. I bought my first lot through an agent, and did not then know what sorts were suitable for this district. I believe the sorts I have now can be successfully grown here.

I am, yours respectfully,

WM. GREGORY.

BLACK APHIS ON CHERRY TREES.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

DEAR SIR,—I have a fine cherry tree, the growing shoots of which are full of small black lice. Will you kindly, through your columns, inform me the most effectual method of destroying them, and oblige,

Yours, SUBSCRIBER.

REPLY.

Tobacco water will kill the black aphid. This is made by steeping tobacco stems in water until the liquid is of a dark brown color. The stems can be procured of any cigar maker.

If the tree be small the twigs can be bent down and dipped in the water; but if large, it will be necessary to throw the tobacco-water on the young shoots with a garden syringe.

If tobacco stems cannot be conveniently procured, common plug tobacco will do just as well.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

SIR,—If convenient, will you please in July number mention how to grow Tuberose, and at what time of the year, and you will greatly oblige,

Yours, A SUBSCRIBER.

Please read the article on page 93 in April number for this year.—EDITOR.

RICE AS A SUBSTITUTE FOR POTATOES.

When the excellence of rice as a diet is fully understood, its use will be more frequent and of daily occurrence in every household. At this season of the year especially, it may properly be classed as superior to any of the cereals which are in such general use for the morning and mid-day meals. No other food is so easy of digestion, and at its present cost it is cheaper than potatoes, oat-meal, or grain-grits of any kind.

CAP RASPBERRIES.

The improved methods of drying fruits, and the ready market for dried berries, have given a new impetus to the culture of Cap Raspberries, or Thimble-berries, as properly they ought to be called. This classifying two so distinct species under one name has always been productive of considerable confusion, yet, as they were so denominated by our forefathers, Thimble-berries will no doubt be called Black-cap Raspberries to the end of time.

In the early history of small-fruit culture, Cap Raspberries figured prominently, and many varieties, all chance seedlings, were introduced and cultivated; but from disease and other causes most of them have become deteriorated and unreliable, creating a demand for good reliable new varieties, which seems in a fair way of becoming satisfied. The following varieties are among the most promising recent introductions:

Hoosier Mammoth is evidently a seedling of the old Mammoth Cluster, and is in no way superior to it, unless it be that it is less subject to the casualties which impair the value of the latter.

Florence.—This is a large yellow or buff variety, and were it not that the so-called yellow varieties are not popular, and not in demand in the markets, would be eagerly sought after. It is almost as large as the Gregg, of strong growth, excessively prolific, and entirely hardy. It ripens from mid-season to late, and is of sweet and pleasant flavor. A dish of this and the Gregg, nicely mixed, is a most appetizing sight to all who are fond of Cap Raspberries.

Hopkins originated in Missouri, and promises to be of great value. According to an excellent authority from the State of its origin, it is as large as

the Gregg, decidedly hardier, and even more productive.

Gregg.—In congenial soil, and under proper treatment, this is, perhaps, the largest Raspberry of its class that has as yet been produced. Much disappointment has been encountered with this variety by planting it upon thin, light soil, where most Cap varieties succeed. The Gregg Raspberry, like the Strawberry, delights in a deep, rich, cool soil, and is so critical in this respect that it frequently refuses to respond in the least to any amount of coaxing on almost any other, and proves an utter failure upon sand. It is extra large, jet black, with a decided bloom, and, although quite good, yet not of the highest quality, being somewhat dry and meaty. In time of ripening it is a little later than the well-known Mammoth Cluster, hence late to very late. Very productive (when grown on congenial soil, and with thorough culture), and although exempt from the diseases that attack the Mammoth, and free from its weaknesses, it is not quite as hardy as that fine old kind. However, taken all in all, it is a variety of great value, and worthy of a place in all gardens suited to its culture.

Souhegan is just what every one interested in Cap Raspberries has long been looking for: to wit, a good *early* variety. It has steadily, and entirely upon its own merits, made itself known, and really leaves but little to be desired as an early Black-cap, either for market or the home garden. Of first importance is, that it succeeds on both light and heavy soils, and in productiveness it is simply wonderful, being, without exception, the most prolific variety of the productive Cap Raspberries that has yet come under my notice. In hardiness it appears to be "iron-clad," having stood twenty degrees below zero without injury, when all

others in the same plantation were killed to the ground, and is very early, ripening about a week earlier than Doolittle. It is of fair size, juicy, sweet, and rich, and, what adds much to its value as a market berry, shining jet black, without bloom.—J. T. LovETT, in *American Garden*.

GRAPES.

In answer to frequent inquiries as to the relative value, quality and character of the more common and newer varieties of the grape, we place a number of sorts under the following heads:

Early grapes—Moore's Early, Lady, Worden, Massasoit, Hartford Prolific.

Hardy half-bloods—Burnet, Salem, Wilder, and the other Rogers' hybrids.

High quality and character, with a slight intermixture of exotic blood—Lady Washington, Brighton.

Of fine quality, but poor growth—Eumelan, Rebecca, Walter, Adirondack.

Hardy and high flavor, but poor bunch—Creveling.

Nearly perfect, but not quite good enough—Concord.

Prominent and promising white grapes—Prentiss, Pocklington. Red or darker—Jefferson, Vergennes.

Half-blood, tender, high quality—Allen's Hybrid.

Faultless, but rather small—Delaware.

Hardy and productive, but not good enough—Hartford, Martha.

Good winter keepers—the late-ripening Rogers' hybrids.

Grapes of high value or of high promise—Lady Washington, Niagara, Duchess, Brighton, Rochester, Prentiss, Jefferson.

Of little value—Blood's Black, Janesville, Champion, Charter Oak, Dracut

Amber. Israella, Northern Muscadine, Union Village.—*Altered from Country Gentleman.*

A NEW PRINCIPLE IN PROTECTION FROM INSECT ATTACK.

BY J. A. LINTNER.

(Read before the Western New York Horticultural Society.)

Our more accurate writers in Economic Entomology, in the recommendations which they present for the arrest of insect depredations, have, of late, made a very proper distinction between *preventive* and *remedial* measures. If we construe an "insect attack" in its broadest sense, as a habit pertaining to a species of insect, of regularly attacking a plant or an animal, then its arrest at any time or in any manner, may properly be regarded as a remedy of the evil, and remedial measures would thus comprise preventive ones. But if we limit the "attack" to each separate periodical recurrence of the same, then it is possible by the interposition of preventives to preclude the attack and to render remedies unnecessary, and, indeed, impossible. In this latter sense, "remedies" imply that an attack has commenced: "preventives" that means are resorted to prior to the commencement of attack.

Of the latter, are such measures as change in crops, early or late planting, that may preclude the period of egg deposit, vigorous cultivation, selection of varieties which may be nearly or wholly exempt from attack, washes and coatings or other coverings, or the application of highly odorous substances to the object to be protected, or to the soil adjacent if it be a vegetable growth, to prevent the deposit of eggs.

While the preventives that have been proposed are comparatively few, the remedies could be enumerated by hundreds. Merely to specify a few,

we have the popular applications of Paris Green, London purple, hellebore and pyrethrum, in powder or in liquid form; carbolic acid, kerosene and other oils; soft soap and other alkaline washes, lime, ashes, soot, dust, salt, hot water, hand-picking, tree-jarring, burning infested twigs, attracting to fires, to lights, or to adhesive sweets—all tending to the destruction of insect life in one or more of its several stages.

It will readily be conceded that the use of preventives, wherever practicable, is more economical, more effective, and often more convenient than a resort to remedies.

We propose, at this time, to limit our attention to those means now in great favor, which consist of such applications to the soil or to the plant directly that promise a *safeguard against the deposit of insect eggs*.

The great benefit of commencing our efforts at this point is so obvious as to need no words to commend it. It would not be "nipping in the bud" or "crushing in the egg." It is prior to and beyond these. If no egg be deposited, we have no artfully concealed egg to search for, no larva, whose rapacity and destructiveness we must arrest; no pupa, whose retreat is to be discovered, and no imago, whose egg-distended abdomen is as fraught with evil as was that of the Trojan horse of old, to be captured or entrapped—in short, we have dispensed with the four insect stages that require such unwearied and unending investigation in order to ascertain the most vulnerable point of attack of insect life, and the best means with which to assail it.

Can the deposit of eggs be prevented?

It can be, and has been done with perfect success in many instances. Please accept my simple assurance of this, instead of occupying your time by citing instances in proof thereof.

How may it be prevented? It may be prevented by applying to the plant or to the soil, certain odorous substances which are popularly believed to be disagreeable to the insect, and therefore, to drive it away.

Among these substances may be mentioned kerosene oil, coal-tar, naphthaline, carbolic acid, gas-lime, and bisulphide of carbon. That these and similar substances have been successfully used in preventing insect attack, is undeniable, resting as the claim does, on authoritative testimony, which I would be glad to present to you if there were the time.

How do they prevent the deposit?

The answer to this question is the object of the present paper. The views that I shall present are my own—original, so far as I know. They have been but recently conceived, without the time or opportunity of maturing them. They, as yet, may only claim theoretic value, but believing as I do, not only in their correctness, but that they are destined to be of eminent service to economic entomology, I esteem it a privilege to offer them first to this Society. I do so from the deep interest which you feel in entomological investigations, as shown in the admirable papers that have been presented at former meetings, in the prominent place you have given to entomological topics in your discussions, and in the invitation extended to your State Entomologist, to address you at this time. And beyond these considerations, there is the fact that your membership offers all needed opportunity for testing these views, and I am sure that there is the willingness to take the pains requisite for their proper test.

In answering the question, how do these odorous substances, in their application, prevent the deposit of eggs, I must first premise, that much the larger

proportion of the insect world are guided in the deposit of their eggs, not by the sense of sight, but by the sense of *smell*. Allow me a consideration of this view, before proceeding to its practical application. The idea is a popular one, that most of the moths and beetles and many of the insects that attack vegetation, select by means of sight the particular plant upon which to place their eggs. Their marvellous compound eyes, consisting of hundreds and even thousands of separate lenses, even to the number of 34,000, as in the eye of the butterfly, have been cited as a wonderful provision in nature, to afford that acuteness of vision which was needed in their selection of the proper plant on which to oviposit. While sharing in this belief, I had often wondered at the incomprehensible acuteness shown by an insect in the discovery of the particular species of plant upon which alone the young caterpillars proceeding from its eggs, could feed,—in the discovery of a single individual of a rare species occurring in a certain locality, and growing in such a manner as effectually to hide it from human observation. When its range of food-plants extends beyond a species to all the members of a genus, how could it detect all of the often greatly different forms? When a still broader range embraces the several genera of an extended order, a still greater variety of forms are presented, which the rude insect brain must group and classify, and claim within its province. How amazing such knowledge without previous instruction. It had no parents living, as in the class of vertebrates, which might teach it by example. It had no ancestors a whit wiser than itself from which to learn. The deposit of the egg in its proper place may have been but the second voluntary act of its imago life, regarding that of flight for the purpose as the first. Perhaps a

plant from some distant shore, of which not one of its ever so remote ancestry could have had any knowledge, is brought within its range of wing; its flight is unhesitatingly directed to it, and its precious burden of eggs, without a shadow of mistrust, is at once committed to its leaves. Such knowledge has never been attained by our most distinguished botanists, and it is beyond the scope of human intellect. We have called its displays instinct—a word conveniently framed to cover manifestations in other classes of animated beings, which we are utterly unable to explain. As a partial explanation of these wonders, it has been suggested that to the insect world may have been given senses differing in number and in kind from those which we possess. But all the wonderful phenomena attendant upon insect oviposition by selection is readily explained under the supposition that it is guided and controlled by the sense of smell. We know the value of this important sense to us, how greatly it may minister to our pleasure, and what service it may render in guarding us from deleterious exhalations and from improper food. It is capable of cultivation to the extent of rendering us still greater service. I have been told of a chemist in one of our colleges who can make quite a correct qualitative analysis of a patent nostrum by applying it to his nose, and picking out one after another of the ingredients, first naming those which are simply added as covers. It is related of a blind person that he acquired the faculty of recognizing his acquaintances by the sense of smell. There are negroes in Africa who will follow their masters by scent. A fish dealer in Albany claims the ability of naming each species of fish offered in the market, when presented to him blindfolded, by the odor peculiar to each. The illustra-

tions given us of the acuteness of this sense, in some of our domestic animals, are so numerous as not to need citation. We will quote a single instance of this almost miraculous acuteness, related upon undoubted authority:—“A person, to make trial whether a young blood-hound was well trained, caused one of his servants to walk to a town four miles distant, and then to a market-town three miles further. The dog, without having seen the man he was to pursue, followed him by the scent to the above mentioned places, notwithstanding the multitude of market people that went along the same way, and of travellers that had occasion to cross it; and when the blood-hound came to the chief market-town, he passed through the streets without taking any notice of any of the people there, and left not till he had gone to the house where the man he sought rested himself, and found him in an upper room, to the wonder of those that followed him.”

That insects are controlled by this same sense may seem a bold supposition to those of you who may happen to know, or who may learn now from the confession that I am compelled to make, that notwithstanding the laborious investigations in insect structure, conducted through a century by some of our most distinguished scientists, we are utterly unable to point out with positive certainty the precise location and nature of the organs of smell. Naturalists have differed, and still differ, in their views in regard to their location. Cuvier, Audouin, Dumeril and Burmeister, have regarded the spiracles or breathing pores as discharging this office. Reaumer, Lyonnet, Latreille, and others, have referred it to the antennæ. Others have believed that the palpi were the true smelling organs, and others that the sense belonged to certain cavities in the front part of the

head, and to the mucous lining of the mouth; while Kirby and Spence have thought that they have discovered a nose in the fore part of the head, which they call the rhinarium or nostril-piece, connected with which is a beautifully striated structure, which they have described as the veritable organs of smell.

I am indebted to Dr. Hagan, of Cambridge, Mass., for the following information as to the location of these organs, drawn from *Hauser: Zeitschrift f. wissenschaft Zoologie*, 1880. The Record has just been received, and it gives the latest observations of the best investigators.

Strong smelling substance, as turpentine, carbolic acid, and decayed meats, proved that the organs of smell were situated in the antennæ in very many insects. Nevertheless, not all the insects employed in the experiments were deprived of the sense after the amputation of the antennæ, among which were *Carabus*, *Pyrrhocoris*, &c. After the antennæ were cut the males rarely mated.

Sensitive bristles are present in Orthoptera (*Edipoda* and *Caloptenus*) on every joint of the antennæ after the eighth or ninth, and fifty sensitive pits or furrows, which are probably closed by a fine membrane and have interiorly one smelling-rod. *Stenobothrus* and *Gryllotalpa* are similarly provided. Diptera (flies) have in the third joint 100 to 200 furrows, with as many as 200 sensitive bristles. *Vanessa* has on each joint of the knob of the antennæ fifty furrows. Of the Coleoptera, the Carabids, Cerambycids and Curculionides, possess no antennal furrows, while they are present in the Silphides, Staphylinides, and Tenebrionides. The Lamellicornes have on the under side an immense number of very small furrows, viz., in the female, 17,500, and in the male 39,000.

All insects which have to rely upon the sense of smell for discovering their food or placing their eggs possess many sensitive furrows or pits in the antennæ, as bees, wasps, ichneumons, Diptera and Lepidoptera.

Dr. Hagen suggests that probably in many insects the organs of smell and taste are united. Such may be the organs which are found in the honey-bee in the epipharynx (on underside of the labrum), consisting of numerous sensorial furrows, and which have just been discovered in the same position in *Aphis* and *Cicada*, by Mr. H. Osborn, of the Iowa State Agricultural College.

THE NEW WHITE GRAPES.

A young inquirer wishes to know the comparative quality and value of four new white grapes which he names, namely, the Duchess, Pocklington, Prentiss and Niagara. Without having had an opportunity of examining them critically side by side, we should place the Duchess first in quality, a drawback being its one-fourth foreign blood, and the fear that this intermixture may possibly injure the foliage in future. Next in flavor would be the Prentiss, a strictly native sort, of excellent quality, but not equal in this respect to the Duchess. The Niagara, although one notch lower in flavor, is larger, finer in appearance, a prodigious grower and bearer, and on the whole has an unusual number of excellent points not found combined in any other variety. The Pocklington is still larger, and perhaps more showy than the Niagara, but a notch farther down in quality at the usual time of ripening. We are informed, however, that if allowed to hang several weeks it becomes excellent. These four sorts all stand high, and are all eminently worthy of trial.—*From the Country Gentleman.*

CALLA ÆTHIOPICA, OR "TRUMPET LILY."

A correspondent of the *London Gardener's Magazine* says :

"The Trumpet Lily has become so much in demand of late years for furnishing cut flowers for church decoration at Easter and for indoor decorations generally, that a hint or two on its cultivation will perhaps be of service to



some readers of the *Magazine*. First of all I would say that I have tried many ways of growing it. For example, I have tried drying off the plants through the summer at one time, and keeping them growing in pots and feeding them highly at another. But the plan which causes the least trouble, and gives the best results, is planting them out. If you have a few examples to start with, as soon as danger of frost is over, in the spring, turn them out in rich soil in the kitchen garden, and water liberally to settle the soil about the roots. They will soon become established and take care of themselves, unless the weather is very dry indeed, when an occasional soaking with clear water or liquid manure will be of service to them. They will not seem to make much progress until the nights become rather cool, when they will grow most sturdily. They must remain in the border until there is danger of frost, and then be taken up and potted. If an increase of stock is desired take off the offsets when the stock is lifted, and put them several together round the sides of five or six inch pots. These can be put out as advised above in the spring following.

If it is desired to put them in small pots carefully remove all the soil from the roots, and put them in pots of the desired size. The massive plants which already contain the flowers will not show the least sign of distress if after potting they are well watered and kept well shaded for a few days. I have taken up thousands and treated them thus without losing a leaf. If wanted for Christmas, those which show flower (and many of them will bloom earlier than Christmas if forced on at once) should be selected for putting into heat. The others will come on in succession, and many of them, if kept cool, will not start until Easter, when the flowers are again in great demand."

THE SECRET OF GOOD LUCK.

It is very common to hear people say that it is no use for them to plant fruit trees. They have no luck with them. But in truth luck never did anything of any importance. We don't trust our farm or general garden crops to this person, Luck; but the sensible farmer and grower employs good, careful hands, and directs their work by long experience, and the teeming harvest field and luxuriant vegetable garden attest to their wisdom and industry. There is no luck about it, but a careful measuring to the end to be accomplished with the means at hand to gain it. Whenever the same means have been adopted with fruit trees good results have followed. In our own district there are "loads" of people who have wonderful success with certain things that they set their hearts on, and the growing of fruit is among these successes. But these men, we repeat, do not trust to luck. The trees are pruned as they ought to be and manured with what they need; precautions are taken against injury from curculio and borers, and thus industry, and not luck, meets

with its due reward. Try it as fruit raising and every other crop raising ought to be tried, and see how easy it is to get good fruit and plenty of it by going about it in the right way.—*Germantown Telegraph.*

NUT-BEARING TREES.

(From the Witness).

BY JAMES DOUGALL, WINDSOR, ONTARIO.

As you have advocated, from time to time, the planting of nut-bearing trees in places where the land is not suitable or not intended for cultivation, and as there has been some inquiry through your columns regarding the proper time and way to plant and cultivate them, I give you my experience on the subject.

THE BLACK WALNUT (*Juglans Nigra*), owing to its gigantic size, its beautiful and graceful appearance when at maturity, its quick growth and the great value of its wood in a commercial point of view, besides its value as a nut-bearing tree, is first of its class. It is in every way suitable for road, lawn, or grove planting where the soil is suitable, but I doubt if it could be grown to advantage on rocky or barren lands unfit for cultivation, as it requires a rich, deep soil. It grows naturally to an immense size on the rich lands of the western peninsula of Ontario, in Ohio and other States. In 1853 I planted a row of one-year-old black walnuts. No after care was taken of them. The greater part, including the largest, were cut down to make room for buildings. On examination I find only four of them left, the largest of which measures four feet in circumference at the butt, three feet six inches at six feet high, and three feet at fifteen feet from the ground, and upwards of forty feet high; the other three trees are about an eighth less in size. Had the nuts been planted where the trees were to stand, and had they not been

injured by buildings so near them, they would probably have been much larger.

THE BUTTERNUT (*Juglans Cinerea*), is not so large or so valuable a tree as the black walnut, but it will grow in places where the other will not thrive, and grows naturally much farther North. I have seen it growing to a good size on the stony sides of the Montreal Mountain, and it would no doubt do well in places unfit for general cultivation. The wood is not so valuable, but the nuts are preferred for eating to the black walnut, though both are rather strong and cathartic. Both are nearly as good for pickling when gathered, green, as the European walnut.

THE EUROPEAN WALNUT or MADEIRA NUT (*Juglans regia*), where the climate and soil are suitable, would be a valuable tree to plant, but it is too tender for this section of the country. I have tried it largely, but it is invariably Winter-killed to within a foot or so of the ground, sending up strong shoots from the base the following season, to be again killed down the following Winter. My soil is a strong clay loam. If planted on a light soil, with gravelly sub soil, it would perhaps stand the Winter here, and further South it would no doubt succeed well and prove profitable for the nuts as well as for the wood.

THE HICKORY, shell bark (*Carya Alba*), is only second in value to the black walnut, if it is not really first. The wood is very valuable, being much used in carriage building and for other purposes, while as a wood for fuel it stands first. The nut, with perhaps the exception of the sweet chestnut, is the most prized of any of the nut-bearing trees of this country, and always commands a steady sale and high price, which will continue to increase as the trees in the forests get scarcer, large

numbers being cut down for firewood everywhere.

In clearing a farm for pasturage some years ago I left all the hickory-trees, of which there were a great many, some of them of very large size. I found great differences in the size and quality of the nuts. Some were very large, with very thick shells and but little meat in them, others nearly as large with comparatively thin shells full of meat of a finer flavor, while others bore small or medium-sized nuts of inferior value.

The hickory, from its upright, graceful habit, its quick growth and valuable qualities, is one particularly suited for roadside, lawn, or grove planting. It requires a similar rich soil to the black walnut, or rocky hillocks with good soil among the stones, on which it will attain a large size, bearing early, and will prove very profitable to those who plant it largely. The nut must be planted where the tree is to stand, as owing to its large tap-root it will not stand transplanting from a seed-bed, as I have found by experience.

THE PECAN (*carya olivæformis*) is a variety of the hickory, with oblong-shaped nuts, a thin shell and more delicate flavor. I have not heard of its being grown to any extent in the Northern States, its natural habitation being further South; but I have no doubt it would grow well wherever the hickory grows. It is equally hardy here, and grows fully as fast and strong as the hickory. Some years ago I planted some of the nuts in my garden in the Fall. They grew the following Spring, but being too close together I removed all but one and planted elsewhere. Like the hickory they did not stand transplanting, and dwindled away. The one left grew very fast till it attained two feet in circumference, when it suddenly blighted just as it was coming into bearing and died back. Supposing

it had been injured by the Winter, or unsuitable to the climate, I thought it would not succeed so far North, but I afterwards found that my neighbor had placed a number of barrels of coal oil against my fence, which had leaked so much that two years after in digging I found the subsoil perfectly saturated with the oil. This had killed the roots of the tree on that side. On cutting back the tree to a shoot on the sound side it has since grown fifteen feet, and bids fair to become a good-sized tree. The pecan is well adapted for a shade tree or for planting for profit.

THE SWEET CHESTNUT (*Castanea Vesca*), is one of our largest and handsomest trees, and is very profitable when grown on suitable soil. It is very prolific—the nuts, which are easily gathered, falling to the ground when ripe, and selling at high prices in any quantity. It will only grow on light, sandy soils, with gravelly subsoil, where it attains an immense size. A friend made as much from a fine grove of gigantic trees near his house as he did from the rest of his farm of fifty acres. His trees were near enough to overshadow the ground so that grass would not grow, and he kept it clean and smooth, so that the nuts could be gathered once or twice a day, as they fell. The timber is also valuable and very lasting.

THE EUROPEAN or SPANISH CHESTNUT is said to be the same as the American, but larger fruited. It has been greatly improved by cultivation, and is now nearly as large as a small horse-chestnut, but is not so sweet or fine-flavored as the common American variety. In Spain, the southern parts of France, Italy, and the adjacent countries, sweet chesnuts, either raw, boiled or roasted, or ground into flour, form a common article of diet. It is not, however, the wild chesnut which furnishes the nuts that

are consumed in the south of Europe and exported to more northern countries, but a number of cultivated varieties, the nuts of which are larger and sweeter.

I formerly imported a large number of trees of the best of these varieties from France, but they were too tender for this climate, and died off in a few years. This may, however, be attributed to unsuitable soil, and I presume that, planted on soil in which the common chestnut thrives, they would stand our Winters. Farther south, on land as previously described, they would no doubt do well and prove highly profitable; while in the light, sandy soil best suitable for it other crops do not prove profitable.

THE ALMOND (*amygdalus communis*), will do well in many parts of the United States, wherever the peach grows and the seasons are long enough to bring its fruit to maturity. I have grown the hard-shell variety in perfection here, but I have not heard of orchards being planted with it, though it would prove highly profitable in the Southern States or California; and it could be grown in place of peaches where the latter would be too far from a market. Its cultivation is the same as the peach, to which it is nearly allied. In France the peach is commonly budded on the common almond, being considered more hardy. There are several varieties, the common the *hard-shell sweet*, the *soft-shell sweet* and the *bitter almond*. The *soft-shell sweet* ripens much earlier than the other varieties, but is rather tender north of Philadelphia. As the nuts imported from Europe are often stale and musty there is no reason why all that are required in this country should not be grown in it, so as to have them always fresh and sweet.

The cultivation of nut-bearing trees

is very simple when understood. As a general thing they will succeed much better if the nuts are planted as soon as ripe in the Fall where they are to stand. The greater part of them have very large tap-roots which have to be cut off short in removing them, so that they do not thrive or even grow, as before mentioned, when transplanted.

Two or three nuts should be planted in a hill, the best only being allowed to grow. The great difficulty in planting in this manner on waste lands which are usually used as pasturage will be to keep the cattle from browsing them till they are high enough and large enough to be out of danger. A few stakes driven in around them and wattled with thorn branches is an excellent protection, and a space round each tree wherein grass should be hoed for some years.

When planted as orchard or groves it would be advisable to keep the land planted with corn or hoed crops. Thick planting is advisable, to be thinned out by degrees to the proper distance. The thinnings of the hickories more especially would sell well and pay for the cultivation till the trees begin to bear.

After procuring the nuts in the Fall they should not be allowed to dry or shrivel in the least. If not convenient to plant at once where they are to stand they should be mixed with sand or light mould in a box or barrel and exposed to the freezing and thawing of Winter, to be planted out the first thing in Spring, as is usually done with peach-stones.

Windsor Nurseries, Ont., Canada.

MULCHING STRAWBERRY PLANTS.—A correspondent of the *Rural World* advises fruit growers to use old straw for a mulch for strawberries when applied in the spring to keep down weeds, as in a dry time the straw does not settle down to the ground.

THINNING OF FRUIT.

A fruit tree cannot bear a very heavy crop oftener than once in two years, and in order to obtain an even-bearing tree, the fruit should be thinned very freely every year. This would secure not only very even crops every year, but finer and superior fruit. Thinning is easily done if we obtain a slender pole with a hook-like knife attached, or even a codfish hook, by which the extra fruit could be easily cut out.
—*Michigan Farmer.*

We fear that there will be little occasion to urge upon our readers the practice of thinning out the fruit this season, unless it be in the matter of grapes, for the cold easterly storm that prevailed when the trees were in blossom in the Niagara District has thinned the fruit quite too severely in that great fruit-growing region.

SALT FOR ASPARAGUS.

Chas. Hovey, in the *Massachusetts Ploughman*, takes exception to the general impressions that salt is essential, or even beneficial, to asparagus, saying thousands of plants are annually killed or injured by its application. He also says that our "mammoth" specimens do not compare with some grown by the ancients, and quotes Pliny as saying "there was a variety which grew near Ravenna, a deep, sandy country, three shoots of which would weigh a pound."

It may be that enough salt has been applied to injure asparagus, but we have never seen an instance. It is a maritime plant, growing naturally in salt marshes, hence not likely to be injured by any reasonable application of salt.

TO GET RID OF MELON BUGS.

A Virginia farmer, as soon as bugs appear upon his melon vines, puts about half to a whole gallon of sharp sand immediately around them, and with melons, cucumbers and squashes found it a sudden and sure cure. It is supposed the heat and the inability of the bugs to shelter themselves from the hot sun by going into the ground, constitute its virtue; at any rate, in this instance, it succeeded perfectly and gave great satisfaction. Just spread the sand as if putting ashes around grape vines or fruit trees.

Will some of our readers please give the above remedy a trial, and report results to the *Canadian Horticulturist*? It is a new expedient to us, and we have grave doubts as to its success with our Canadian melon bugs, and yet it is so easy of trial and inexpensive, that it would be interesting to know whether it will succeed.

ROOT PRUNING FOR TOMATOES.

Root pruning of tomato plants is recommended to induce early maturity of the fruit. While the plants are young they are transplanted several times, which of course destroys some of the roots; and after they are put into their final resting place, a spade is once in a while thrust down into the ground a foot or so from the main stalk. In this, of course, size, and perhaps quality, are sacrificed to a few weeks earliness; but many are willing to pay this penalty for the sake of the early dish. Those wishing to secure an early ripening of fruit will do well to practice this system of root pruning upon a portion of their plants. Tomato plants produce better and more evenly ripened fruit when afforded some support, as by stakes or trellises, to keep vines from the ground.—*New York Herald.*

THE CANKER WORM.

This destructive pest is making sad havock in some of the apple orchards of Western New York. It is therefore quite possible that some of our readers will find the enemy at work in their own orchard, and will be glad to read the following which we clip from the *Michigan Farmer* on fighting the Canker Worm.

The *New England Farmer* recommends the following method of reducing the numbers of the Canker Worm :

"It is very common for writers on Canker Worms to recommend that the trees to be protected be treated with printer's ink quite frequently, beginning in October or November, and continuing the practice till the trees are leaved out in spring. It is not improbable that the moths may occasionally mature sufficiently in their pupa skins to burst them and come forth, during unusually mild weather in autumn, but in average years the number that come out of the ground before spring will probably be found to be very small. Mr. O. A. Hillman, whose apple orchard is one of the best in the vicinity, has made the habits of the canker worm a study, and has found that the female moths, which are wingless, very seldom crawl up the trees till the first really warm day in spring. His method of protection is printer's ink, spread upon strips of paper some six inches wide, which are wound round the trunks of the trees and fastened by two or more carpet tacks at each end of the band, the paper receiving one application of the ink early in the spring, and then the trees are examined every warm day till the moth begins to move, when the ink is again applied. His observations lead him to believe that the moths move almost solely by night, and that the

greater portion leave the ground the same night and immediately following the first warm day. By watching closely, and by having the papers all in place and covered by one application of ink, he is able to know by the few scattering moths caught, just about the right time to give them a sticky path to travel in. Last spring a very warm day in April gave promise of starting out the moths in full numbers, and by painting the bands of the entire orchard one afternoon, he was enabled the next morning to see nearly the whole previous year's crop of moths imprisoned in the sticky mass. The number which crawled up late was too insignificant to be worth paying much attention to, unless utter extermination of the species be aimed at, which would be an undertaking of no small moment where an orchard is surrounded by trees belonging to careless neighbors.

"At the close of the pairing season, the tacks are drawn out from one end of the paper bands, and they are allowed to hang loosely during the growth of the tree in summer. Before winter the papers are replaced, and if the trees are now too large to be encircled by the bands, the ink is brushed over the intervening space on the bark itself."

SALSIFY.

Salsify, or Vegetable Oyster, is one of the easiest crops to raise, and every garden should have a row or so. Salsify is excellent, fried or boiled. If boiled, it should be scraped, cut in half-inch pieces, and thrown in water (made acid with a little vinegar) immediately, or the pieces will turn a dark color. Boil for half an hour, and add milk, salt, pepper and butter. Our readers should try this really delicious vegetable, cooked as above. The culture is much the same as that for parsnips or carrots. Sow *early* in drills 10 inches

apart, and thin out to four inches apart in the drill. It may remain in the ground all winter, and will not be the worse for freezing.

FERNS AS HOUSE-PLANTS.

Ferns for window-plants should be such good-growing common sorts as cannot fail to give satisfaction; the finer and more delicate kinds, and those requiring special treatment, should not be attempted, unless we are prepared to give them the care they demand. A well-grown, thrifty Fern is always pretty,—a scraggy, sickly thing is a miserable-looking plant indeed. You can grow your Geraniums, Fuchsias, Mahernias, Pinks, Mignonette, Petunias, and Oxalis, in your sunny windows; Ferns do not like such quarters, but prefer the very quarters those flowering plants don't like—namely, sunless windows. Ferns like lots of light, and to be grown near the glass, but they dislike direct sunshine. Ferns may be grown separately in pots, or baskets, or in the same pots as Calla Lilies and other window-plants.

Soil for Ferns.—Ordinary observation will teach us that different Ferns require different soils: for instance, we go into the woods and find the little Spleenworts growing in the chinks of rocks, the Virginian Chain-fern in wet swamps, the Hart's-tongue under limestone cliffs, the Sensitive Fern in wet meadows, and evergreen Acrostichums on the hill-sides. Then, again, in California and Colorado we find little farinose and crispy-leaved Ferns growing in open rocky and gravelly places, and so on. For ordinary Ferns I should advise a compost of turfy loam with the finest stuff sifted out of it, old-leaf soil and peat (that is, if you have upland peat; but if you have not, do not use any), in equal parts, and some sharp sand. Gross-growing Ferns like a little

manure. Some pounded charcoal is a good addition to the soil.

Watering Ferns.—Give Ferns lots of water at all times. The soil should be of such a porous nature that superfluous water will run off as fast as received, but care should be taken not to over-water the plants. Ferns like to be dewed overhead; gold and silver and some Maiden Hair Ferns, when they become old plants, had better not be watered overhead, but young ones of them are assisted by dewing. In mild, showery weather in spring put out your plants to get the shower; it will do them good; but take them in again.—WM. FALCONER, in *American Garden*.

CHINESE PÆONIES.

The Chinese Pæonies are so valuable on account of their large size, beautiful coloring and delightful fragrance, and so entirely hardy and vigorous, that all should have at least a *White* and a *Pink* Pæony. *Fragrans* is one of the best Pink varieties, but there are few exhibitions that present such a wonderful combination of colors as a bed of Pæonies. The Pæonies are perfectly hardy, never suffering injury by cold, and will succeed in any ground, unless so wet that the water will lie on the surface in the winter and spring. They may be planted either in the autumn or spring, and are transported with greater safety than almost any plant—not one in a hundred failing. They are also easily increased by division of the roots. A little extra attention in the way of manure will induce a vigorous and rapid growth. We do not know of anything that injures the Pæony, except starving in a poor soil and standing water during the cold season. For large floral decorations few of our flowers can surpass the Pæonies. They seem designed for a grand display, without anything cheap or gaudy in their appearance.—*Vick's Floral Guide*.

THE WATERMELON.

Hon. C. M. Clay, of all fruits, most esteems the watermelon, believing them when fully matured exceedingly healthful, and keeping down tendencies to fever. He says the meat should be red, clear, fine grained, tender and sweet, that but one variety should be planted at a time, but if more are planted they should be set very far apart, as they hybridize very easily, and even at great distance, the wind and the bees convey the pollen of one variety to the flowers of another. He has never succeeded in getting two first-class crops from the same ground in succession, and has found blue grass sod the best for them, and second in desirability newly cleared land. He recommends as fertilizer sand mixed with the vegetable *debris* of forests, or well rotted sods from fence corners or highways. He manages the striped bug and takes care of the vines in the following manner. "As soon as the seed are planted and struck with the shovel to compact the surface, in order to prevent the escape of moisture, I place shingles upon each hill to trap the striped bug, the great enemy of the vines. They seek the shelter of the shingles in the cool nights, when each evening and early morning they must be turned over and the bugs killed with a paddle. Many persons fail to raise melons because of these bugs, which conceal themselves in the ground and suck the juices of the young plants, and may never be seen till the whole crop is destroyed. An old melon raiser told me that he was in the habit of making blazing fires in his melon grounds at night, and that bugs would fall into the flames and be killed; I never tried it, finding the shingle trap sufficient. As soon as the plants are well up you may begin the thinning, till, as they get past the chances of destruction by the bugs and their leaves are well formed, they must be thinned to two plants in a

hill. As the plants advance, the weeds must be kept well under before the vines, but never touch behind them, as the vine will not admit of being handled or moved. I think nearly the same weight of fruit will be produced without topping or shortening the vines, but if large specimens are wanted, after the fruit is set, the ends of the side shoots and the main runner may be pinched off, so as to force all the sap into the few melons left for maturity. It is best to cultivate the vines late in the afternoon, so that the roots injured by the cultivator, plow or hoe, can have the whole night to recover before the sun comes upon them. When ripe they should be gathered early in the morning when cool, for the sun gives them the dull sound which maturity produces. They should be thumped lightly with the finger nail, when, if they sound with a metallic ring, seeming to pass through the whole melon, they are yet green; but if the sound is dull and seemingly confined to the rind, the melon is ripe. When the belly next the ground is white, or the curl of green fresh vines dead, these are also indications of ripeness. As the frequent walking to the hills to kill the bugs solidifies the surface, it ought to be lightly hoed towards the end of this operation. No careless persons should be allowed to enter the melon grounds, as a vine trod upon ceases to be useful; and the one who gathers the fruit should have a long stick to steady himself, and to displace the leaves to find a place for his feet. It also often happens that the vines on clean surfaces find nothing to lay hold of with their tendrils, and are blown over by the winds and severely injured. In such case they should be set upright, and clods placed on the leaves to steady them, or small sticks set near the vines for the tendrils to lay hold of. Avoid walking on the ground when quite wet, and never hill up or

reduce the height of the soil about the stems of the vines."

PRUNING THE GRAPE-VINE.

BY GEO. W. CAMPBELL.

The objects in pruning the vine are mainly to keep it within reasonable space and control; to induce a new growth of healthy and strong bearing wood; and to regulate the quantity and improve the quality of the fruit. The best time to do the principal pruning is in the Autumn, as soon as practicable after the falling of the leaves, and when the energies of the vine are dormant. If the little Summer pruning and pinching that are necessary have been properly attended to, there will be only required in the Fall to cut out the old bearing wood of the current year and to shorten the new canes which have been grown for the next year's bearing, in order to occupy their appointed spaces upon the trellis, the wall, the stake or the arbor upon which they are to be trained. And for all partially tender varieties, and for all localities subject to excessive cold in winter, it is better to lay down the canes upon the ground after pruning. Where the ground is covered with snow during the severest weather, simply pegging or fastening the canes upon the surface of the ground is all that is needed; but in other places a light covering of earth or of leaves is necessary in addition for perfect protection. It is the testimony of some old, practical vineyardists that vines so treated make a healthier and stronger growth and bear much finer and more abundant fruit. A very successful grape-grower in Southern Ohio recently declared that vines pruned early in Autumn and slightly protected during the succeeding winter bore twenty-five per cent. more and better fruit than vines that were left unpruned upon the trellis until Spring. All methods of pruning the vine are based upon the

fact that the fruit buds for the next year's bearing are formed upon the wood grown the present year; hence as much as practicable of the old and past-bearing wood should be taken out at the annual pruning.

In my own practice, I prefer what is called the "annual renewal system," which allows a young vine in its first fruiting to bear no more than it can bring to maturity, and at the same time grow one or more strong and healthy canes from as near the ground as practicable for next year's bearing. The bearing wood of the present year is cut away and the new wood takes its place. This practice, with slight modifications, is continued during the life of the vine, is readily understood and applied, and a little observation and experience render it quite simple and easily performed.

A cultivated vine is in an artificial condition, and all its energies are directed toward the production of the greatest quantity of fruit within its allotted space; and some vines respond so readily to this artificial treatment that they are disposed to overbear, and set more fruit than they can mature. Attempting to grow too much fruit may so overtax the powers of the vine that it can neither ripen its grapes nor mature its wood perfectly for next year's bearing. Vines so treated are unhealthy and short-lived. It is better, however, to avoid the evil of overbearing by thinning out the fruit, especially all the small and imperfect bunches, than by too close pruning; for an abundance of healthy foliage is necessary for the ripening process.

The Summer treatment consists in thinning out the fruit upon vines disposed to overbear; early pinching off the ends of fruit-bearing shoots two or three joints beyond the last cluster, and then removing all superfluous

shoots except what are started from below and are needed for next year's bearing. This, with an occasional pinching of the end of a too rampant shoot will be all that is required. And when one has learned so to gauge the capacities of his vines as to bring each year his crop of fruit to perfect maturity, and at the same time have a sufficiency of sound wood for the next year's crop, he has learned all that is necessary for successful grape culture. —*Rural New-Yorker.*

SPINACH.

For winter and spring "Greens," Spinach takes a front rank in every well-managed kitchen-garden, and, in the vicinity of large cities, it is also a profitable crop for market.

Spinach needs a deep, rich soil to produce maximum crops, for it can only be grown with profit on land that is well drained and highly manured. For a succession, the seed may be sown early in April and again in May—for the principal crop from the first to the middle of September, or late enough to become about half-grown before cold weather sets in.

A piece of land from which a summer crop has been taken is most suitable. Before sowing, the ground should be well manured, thoroughly pulverized, and the surface leveled. The rows are then marked out, twelve to fifteen inches apart, with a garden "marker," or by stretching a line, and making drills with a hoe. The seed may be sown in the garden by hand, and in the field with a seed-drill, using five or six pounds to the acre. A quarter of a pound of seed will sow enough for home use. With this, as with most other seeds, it is important to firm the soil, after covering, with a roller, or by packing with a spade or board. As soon as the plants are large enough,

they should be hoed and thinned out where too thick. What is wanted for home use in midwinter should be mulched lightly with salt hay, forest leaves, or straw, to a depth of two or three inches; this is sufficient to protect the leaves from injury by frost. Or if the Spinach has grown to full size in the fall, it may be kept very well by cutting it, then placing it three or four inches thick in a frame, and covering it with a sash and a little rubbish. The covering of the open beds should not be removed before the leaves commence to grow.

The main crop is cut during April and May. When the soil is rich, and proper care has been given, a barrel of Spinach can be cut from a square rod of ground.

The *Round-leaved* is the most popular variety for home use as well as for market. It is perfectly hardy, standing our severest winters with but little injury, and is of the best quality.

The *Prickly* or *Fall* variety is said to be more hardy than the round, although there is but little difference in this respect. It is used principally for fall sowing, but does equally well when sown in spring.

Savoy-leaved has a large curled or crumpled leaf like Savoy Cabbage, is very hardy, and produces a heavier crop than the other sorts. It is especially adapted for late fall sowing.—*The American Garden.*

THE TUNISIAN'S PASSION FOR FLOWERS.

The Tunisian Arabs have a passion for flowers, and as soon as their spring commences even the poorest and raggedest may be seen with a delicately scented blossom stuck above his ear, the stalk resting amid the folds of his turban, and the flower projecting forward over his dark cheek. I have been

told by those who have had thirty years' knowledge of these people that they will almost go without bread to buy flowers. And there is something in the sight of a gaunt, toil-worn Arab, whose sole garments may consist of a piece of coarse sacking and a ragged old turban, with a bunch of delicate spring blossoms drooping their cool freshness against his swarthy cheek, which stirs a strange mingling of sympathy and pity and admiration.—*All the Year Round.*

THE RUSSIAN MULBERRY TREE.

This tree was introduced into the United States by the Mennonites, a sect which formerly lived in Germany, but who emigrated because the German government insisted upon their serving in the army, which their religious scruples forbade their doing. The Czar of Russia offered them a tract of land for settlement in 1800, and agreed to exempt them from military duty. From Russia a goodly number have emigrated to this country and settled in Kansas, Dakota and Nebraska. The mulberry tree was introduced into the colonies in Russia by the Czar, for the purpose of silk culture. He compelled the Mennonites to buy these trees of government. Each land holder must plant a certain number. After cultivating them until they learned their value they voluntarily propagated these trees very extensively, and learned that silk culture was not the only consideration in raising them. They found the timber very desirable fuel. It also furnished the finest material for cabinet work, and fence posts made from it would outlast those made from any other timber. The tree soon became the most highly prized of any Russian timber tree. It also bore edible fruit which was marketable in Russia. When the Mennonites came to this country they brought the seed of this

mulberry with them. They brought the seed of several other trees, but planted these more extensively than all others combined. They grew quite rapidly. Trees, the seed of which was planted six years ago, are now twenty feet high and large enough for fence posts. The tree resembles the apple tree in its habits of growth. The Russians say that they grow quite large, often reaching the height of forty feet, and from three to five feet in diameter. They bear fruit very young, frequently commencing when two years old, and bear every year. It varies in flavor from sub acid to sweet, color jet black and reddish white, ninety per cent. being black. The bark is grayish white, and branches drooping. The Mennonites also use it as a hedge plant, and it makes a beautiful hedge and stands shearing as well as any tree.

SHAFFER'S COLOSSAL RASPBERRY.

President T. T. Lyon, of the Michigan Pomological Society, thus speaks of this newest novelty in raspberries :

"Last spring I received for trial, plants of the Shaffer Raspberry. Its growth from last spring 'tips' would seem to justify the title Colossal sometimes imposed upon it. Judging from its habit, as well as from the color, texture, and flavor of the fruit, I am led to consider it a hybrid between our two natives, *Occidentalis* and *Strigosus*. It ripened a few berries, on canes of the current year, about the middle of August, 1881. It seems to possess much more than the usual vigor of *Occidentalis*; and, so far, roots from tips only. The foliage, as well as the wood growth, is very vigorous and healthy. Fruit large, dark purplish-red, with a very slight bloom. Texture rather firm, moderately juicy, with a rich, acid, sprightly flavor."—*Rural New-Yorker.*

THE SUCCESSFUL EXHIBITION OF CANADIAN FRUIT IN GERMANY.

Yesterday afternoon, in connection with the anticipated increase in immigration from Germany, reference was made to a letter received by the secretary of the Horticultural Society. Mr. Evans to-day sends us the letter:—

SIR,—The directors of this Society will be glad to have you give publicity to the following letter relative to the collection of apples sent to Germany lately by the Association. As Mr. Munderloh observed, the Germans being a thoughtful people will speedily decide that a country producing such fruit cannot be the barren, inhospitable region that interested parties have sought to make out. This Society would be able to make collections of fruit from time to time as it arrived at maturity the coming season at very trifling cost to the country.

I may state that the last shipment of fruit was made in the patent cases furnished by Mr. George A. Cochrane for the purpose. The safe arrival of this fruit at its destination goes far to show that our delicate fruits can be transported to distant markets in prime condition if properly packed and picked.

Yours respectfully,

HENRY S. EVANS,
Sec'y and Treas.

Montreal, Dec. 15, 1881.

REUTBIEGEN, WURTEMBERG, GERMANY,
November 21st, 1881.

SIR,—I received with a letter of Mr. Munderloh a collection of apples which you had the kindness to hand to him for me. It arrived at the moment as I was opening the exhibition of the objects brought over by the Geneva delegates from their journey through Canada. It received the highest approbation from all judges, especially from Dr. Lucas, the principal of the Pomological Institute at this place, to which gentleman I presented the ex-

ports of your society. I presented them also to our Department of Agriculture. As agent of the Dominion of Canada in this country, I think of continuing a permanent exhibition of Canadian products for stimulating and encouraging emigration to Canada, and I will be very grateful to you if you will assist me for the coming year by sending such excellent fruits. It is the best way to direct attention to Canada. The reports of our newspapers about the exhibition of Canadian products have expressed themselves in very complimentary words.

I am, yours obediently,

(Signed) DR. OTTO HAHN.

—*Montreal Witness.*

FRUIT-TREE CULTURE.

1. Instead of "trimming up" trees, according to the old fashion, to make them long-legged and long-armed, trim them *down*, so as to make them even, snug and symmetrical.

2. Instead of manuring heavily in a small circle at the foot of the tree, spread the manure, if needed at all, broadcast over the whole surface, especially where the *ends* of the roots can get it.

3. Instead of spading a small circle about the stem, cultivate the whole surface broadcast.

4. Prefer a well pulverized, clean surface, in an orchard with a moderately rich soil, to heavy manuring and a surface covered with a hard crust and weeds or grass.

5. Remember that it is better to set out ten trees with all the necessary care to make them live and flourish, than to set out a hundred trees and have them all die from carelessness.

6. Remember that tobacco is a poison, and will kill insects rapidly, if properly applied to them, and is one of the best drugs for freeing fruit trees rapidly of small vermin—and is better used in

this way than to make men repulsive and diseased.

CONTINUOUS DAYLIGHT AND VEGETATION.

Dr. Schubeler, of Christiana, who has been studying the effect of continuous daylight on vegetation, finds that flowers growing within and about the Arctic circle are larger and deeper in color than corresponding species growing further south. This is the case with garden flowers and such plants as field peas, beans, etc. Not only have the size and colors of flowers thus developed by the continuous sunlight, but their aroma is also intensified. This applies to all parts of the plant. The intensification of the flavor of savory garden plants renders some of them almost uneatable in Scandinavia. All the wild and cultivated fruits that can be ripened at all in Norway have more aroma and characteristic flavor than those which are grown further south. The strawberries, cherries, bilberries, and other wild marsh and wood berries, all exemplify this.

Yet the increase of aroma and heightening of flavor are accompanied with diminished sweetness in going north. The golden-drop plum and greengage of Christiana or Trondhjem, although large, well colored and rich in aroma, are deficient in sweetness. In like manner, the Rheinisch, and other northern vineyards produce wines of finer aroma and flavor than those of Spain and Portugal, but they are less alcoholic, on account of the smaller quantity of sugar which, by its fermentation, produces the alcohol. Therefore, it is inferred that the light produces aroma, and heat produces sweetness. Another theory is that the difference is all due to time; that in the north the continuous daylight, and the day-heat also, develop the fruit so rapidly that there is not sufficient time for the conversion

of the starch and woody fibre into sugar to be fully effected. The same fact is seen in the ripening of pears. Many of these when gathered in the autumn are hard and sour, but become lusciously sweet by merely storing them away until December or January, or even later. Oranges and other fruits sweeten in like manner after they are gathered, without the help of any notable amount of either light or heat. The summer in Norway begins so late and ends so early that the snow often falls upon the cherries before they are gathered.—*Florida Dispatch*.

HOUSE PLANTS.

A correspondent writes:—I will give you the benefit of my experience in keeping house plants just received from the greenhouse. It may be of benefit to some one who is not able to have a glass case for their plants.

I had a frame made of lath, three feet long, two feet high, with a shallow tray in which the frame just fitted. I set out my plants in pots, placed them in the tray, then watered my plants, but not so that the water leaked into the saucers. I then paste newspapers on the frame and place it over the plants, and they need no more attention for a week, except sprinkling the plants once a day. After I have kept them covered for a week, I remove the frame for an hour each day, extending the time until they get used to the temperature of the room; and the frame is very serviceable to place over them at night, or when we are sweeping, or when the room gets too hot or too cold,—the best way I have ever known to preserve even temperature. I placed them in the sun at the south window; they never wilted. I had twenty-five plants—Daphnes, Geraniums, Pelargoniums, Fuchsias, Heliotropes, Lantanas, Bouvardias, Abutilons. I have not lost one.—*Western Horticulturist*.

DEACON DAY AND THE HIGHWAY COW.

The best o' bein's will hev their cares—
There's alwus somethin' to cross our way,
To worry and fret us in our affairs—
An' sech wus the lot o' old Deacon Day;
He had his trials—I'll tell you how
He was tempted an' tried by a highway cow.

The hue o' her hide wus a dusky brown:
Her body was lean, an' her neck was slim;
One horn turned up, and the other down;
She wus sharp o' sight, and wus long o' limb,
With a peaked nose, and a short stump tail,
And ribs like the hoops on a home-made pail.

Many a day hed she passed in pound,
Fur meanly helpin' herself to corn,
Many a cowardly cur and hound
Had been transixed by her crumpled horn,
Many a tea-pot and old tin pail
Had the farm boys tied to her stumpy tail.

Old Deacon Day was a pious man,
A frugal farmer, upright and plain;
And many a weary mile he ran
To drive her out o' his growin' grain.
Sharp were the pranks that she used to play
To git her fill and to git away.

He used to sit on the Sabbath day
With his open Bible upon his knee,
Thinkin' o' loved ones far away,
In the better land that he longed to see—
When a distant beller, borne thro' the air,
Would bring him back to this world o' care.

When the Deacon went to his church in town,
She watched and waited till he went by,
He never passed her without a frown,
And an evil gleam in each angry eye.
He would crack his whip and would holler "Whay"
Ez he drove along in his "one-hoss shay."

Then at the homestead she loved to call,
Liftin' his bars with her crumpled horn,
Nimbly scalin' his garden wall,
Helpin' herself to his standin' corn,
Eatin' his cabbages one by one—
Scamperin' home when her meal was done

Off'en the Deacon homeward came,
Hummin' a hymn from the house of prayer,
His kindly heart in a tranquil frame,
His soul ez calm ez the evenin' air,
His forehead smooth ez a well worn plough—
To find in his garden that highway cow.

Over his garden, round and round,
Breakin' his pear and apple trees,
Trampin' his melons into the ground,
Tippin' over his hives of bees,
Levin' him angry and badly stung,
Wishin' the old cow's neck was wrung.

The mosses grew on the garden wall;
The years went by, with their work and play;
The boys of the village grew strong and tall,
And the gray-haired farmers dropped away,
One by one ez the red leaves fall—
But the highway cow outlived them all.

The things we hate are the last to fade,
Some cares are lengthened through many years;
The death of the wicked seems long delayed,
But there is a climax to all careers,
And the highway cow at last was slain
In runnin' a race with a railway train.

All to pieces at once she went,
Just like a savin's bank when they fail;
Out of the world she wus swiftly sent,
Lettie was left but her own stump tail.
The farmers' gardens and corn fields now
Are haunted no more by the highway cow.

EUGENIE J. HALL.

LEMON ICE.—Soak half of one box of gelatine in a pint of cold water, put it in a porcelain kettle, pour on nearly one pint of boiling water; when the gelatine is dissolved, put in two-thirds of a coffee-cup of white sugar and a half a coffee-cup lemon sugar boiling long enough to make jelly; remove from the fire, then pour in, slowly, three beaten yolks of eggs, the whites of the eggs beaten to a froth; flavor with two teaspoonfuls extract lemon; pour into a mold and set to cool. This is a delicious desert, nourishing and relishable for the convalescing sick.

FENCES.—According to the *Prairie Farmer*, 40 rods of rail fence, in construction and repairs, costs in 11 years (after which it is supposed to be worn out), together with 5 per cent. interest, \$110. Board fence, 40 rods as above, costs \$80. Hedge fence, 40 rods as above, \$164. Steel wire netting, 40 rods as above, \$73 85. In our opinion, 100 acres will require about 500 rods of fence, costing here nearly \$1,000, besides occupying considerable soil. The interest on the \$1,000, the annual cost of repairs, the use of the waste land, and the excess of feed secured by mowing one's pasturing, will much more than pay the wages of help to care for stock kept in stables and yards. We consider farm fences a relic of barbarism, and confidently look forward to the time when our farms will be made conspicuously attractive by their absence. A fenced yard or field cannot be made so attractive as one unfenced, though millions are invested. They are ruinously expensive to farmers, are perpetual abomination, and should be converted to ashes, in which form they can accomplish some good. Of all fences, the stone wall is the most vexatious. Every passing hunter sets it crumbling as he scrambles over, and when in ruins what shall be done? If you don't want the fence again it is worse than the old man of the sea who clung so persistently to the back of Sinbad, the Sailor.

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[No. 9.

THE SECKEL PEAR.

Our readers are presented this month with an accurate colored picture of the venerable original pear tree from which the thousands and tens of thousands of Seckel Pear trees now growing in Canada and the United States have sprung. It is a tree to be held in remembrance, one to which the lovers of pears of high quality might well make a pilgrimage, and standing with bared heads in the presence of this ancient tree, reverently look up upon its time-scarred branches, and count the generations that have gathered its luscious fruit for mayhap two centuries gone. This picture is copied from a photograph taken in 1880, and published in the *Gardener's Monthly* for September of that year. At that time the trunk was a mere shell, one-half of it entirely gone, but Mr. Bastian, the owner, who first knew it forty years ago, said it was much the same when he first knew the tree as now. It measured at three feet six inches from the ground, five feet four and a half inches in girth around the half trunk and across the exposed diameter, and was twenty-six feet high. No one knows who planted this old pear tree. Perhaps it was

never planted, but Topsy-like, it "grewed;" and the imaginative reader may draw such portrait as fancy pleases of the one who dropped the seed in the fertile soil, in the long time ago, whence sprang this tree. Downing says that the late venerable Bishop White used to say that when he was but a lad, a well-known cattle dealer of Philadelphia, known as "Dutch Jacob," used in the early autumn to present his neighbors with pears of an unusually delicious flavor, but would never divulge the place where they were procured. In course of time "Dutch Jacob" purchased from the Holland Land Company the parcel of ground on which stood his favorite pear tree; but as time rolled on it came at length into the hands of Mr. Seckel, who introduced the pear to public notice, and after whom it was named. The farm now belongs to Mr. Bastian, who has owned it for more than forty years, and was told when he moved there that the Seckel family had known the tree for eighty years before.

In 1819 this pear was sent to Europe, and the fruit pronounced by the London Horticultural Society to exceed in

flavor the richest of their autumn pears. Downing, who is esteemed to be the highest authority in regard to American fruits, thus speaks of this pear :—

“We do not hesitate to pronounce this American Pear the richest and most exquisitely flavored variety known. In its highly concentrated, spicy and honeyed flavor it is not surpassed, nor indeed equalled, by any European variety. When we add to this that the tree is the healthiest and hardiest of all pear trees, forming a fine, compact, symmetrical head, and bearing regular and abundant crops in clusters at the ends of the branches, it is easy to see that we consider no garden complete without it. Indeed, we think it indispensable in the smallest garden. The stout, short-jointed, olive-brown colored wood distinguishes this variety, as well as the peculiar reddish-brown color of the fruit. The soil should receive a top-dressing of manure frequently when the size of the pear is an object.”

We have found this tree to be quite hardy in our Canadian climate, and remarkably free from the disease known as pear-blight. Once or twice in the course of twenty years have we seen some of the twigs on the Seckel suffering from the blight; but while other varieties have perished and passed out of sight, this has continued to flourish and yield its annual crop of delicious fruit.

THE MANCHESTER STRAWBERRY.—It can but be described in a single word—“wonderful.” So fine, so beautiful, so firm, so highly flavored and highly perfumed, and so enormously productive. Plants planted but last August forming stools as large as a half-bushel measure, producing fruit in such quantities as to be literally piled about the plants.—*Farm and Garden.*

A MARKET FOR ONTARIO APPLES.

The following letter is from a life member of the Fruit Growers' Association of Ontario, who has for some time been endeavoring to open a trade with the Fruit Growers of this Province. He wants only first-class fruit, free from blemish, codlin moth, &c., and is willing to pay for such fruit whatever it is worth. But it must be strictly first-class throughout, no inferior apples in the middle of the barrel, but each apple fit to be placed on the table of any gentleman. Whoever will supply him with such fruit, securely packed and shipped in good season, will find him a constant and increasing customer.

YARMOUTH, NOVA SCOTIA,

31st July, 1882.

TO THE FRUIT GROWERS AND SHIPPERS OF ONTARIO.

GENTLEMEN,—As a member of the Ontario Fruit Growers' Association, I have for some years (since 1875) taken an interest in the introduction of Ontario Apples into this market, from the persuasion that when once well-known, reliable shipments will meet a ready and extensive sale, as well as from the more personal motive of supplying my own family and my friends with choice fruit.

I have paid \$1,020 in first cost of the several lots shipped, and \$487 15 in charges of transit, and have lost in all about \$300 in the price received for surplus sold, owing to inferior quality of shipments, and to damage by frost and by decay. Last fall a party in Ontario shipped 25 bbls., ordered by telegram in October, so late in November that they were all frozen on the way, and did not even reply to my letter advising him of the fact.

I cannot afford to persevere in experiments with such expensive results. At the same time I am desirous of continuing to import Ontario Apples, either in 20-bbl. lots for my own use, or in car loads for sale.

I would like to hear from any grower or shipper who will agree to supply me with strictly first-class fruit, so that I can sell without opening the barrels to examine, at what price he will ship me in October, say 15th to 25th, 20 bbls. or a car load; also what varieties, and cost of freight through to St. John, N.B., by 20 bbls. and by car load. Payment to be made through Bank draft at sight.

In a 20-bbl. lot I would prefer one barrel each—

1 Amer'n Golden Russet.	11 Peck's Pleasant.
2 Baldwin.	12 Pomme Grise.
3 Esopots Spitzenburg.	13 Ribston Pippin.
4 Fall Pippin.	14 R. I. Greening.
5 Fameuse.	15 Seek No Further.
6 Grime's Golden Pippin.	16 Swaar.
7 Hubbardston Nonsuch.	17 Swayzie Pomme Grise.
8 Melon.	18 Talman Sweet.
9 Northern Spy.	19 Wagener.
10 Newtown Spitzenburg.	20 Yellow Bellefleur.

For any of these varieties not to be had substitute additional barrels of Nos. 1, 2, 3, 6, 9, 13, 15, or 17.

For a car load say—

Nos. 1 2 3 6 9 13 15 17
Bbls. 20 20 20 15 20 10 = 150 bbls.

CHARLES E. BROWN.

MOORE'S ARCTIC PLUM.

Having formed a favorable opinion of this plum, I have made extensive enquiry regarding it, and have thought it advisable to place the facts gathered prominently before this Association. For much valuable information I am indebted to the kindness of F. P. Sharp, Esq., of Woodstock, N.B., a Pomologist of mature experience, and the originator of a system of fruit culture for cold climates that bids fair to be highly successful and largely adopted when more generally known. I hope in another paper to be able to give full details of this system to the Association.

The *origin* of the tree is traced to the grounds of Mr. A. J. Moore, of Ashland, Maine, about sixty or seventy miles north-west of Woodstock, N.B., where unprotected and exposed to arctic cold, the mercury freezes, it has for many years borne enormous crops.

It is a chance seedling, but close observation of its characteristics, particularly in the foliage and wood, lead to the belief that it is a cross between the Imperial Gage and Damson.

In *growth* it is one of the handsomest of trees, being very erect when young, afterwards forming stout trunks with large heads, extremely vigorous, and forming a wonderful number of fruit spurs on the previous year's growth, down to the very base of the most vigorous shoots, even when not headed back. Carries a large quantity of foliage, healthy, of good color, and substance which never "sun scald," or, as far as my experience goes, become infested with aphids or other insects, when other varieties growing beside them are completely covered and the growth much interfered with.

In *productiveness* this variety is all that can be desired—in fact, the crops produced are something enormous, and it has the extremely valuable characteristic of bearing *every year*, some seasons, of course, less than others, but *every year a good crop of fruit*. Mr. Sharp says: "Nothing I could say to you would convey any idea of its real qualities in this respect, but if you will do me the pleasure of a visit to Woodstock, I will show you a nursery of thousands of trees *blue with fruit*." I have 30 trees planted in a permanent row now in the fourth year from bud, and where they have not been cut hard back for scions are loaded with fruit.

I would not go so far as to say that it is *Curculio proof*, but it is so to a limited extent, as I find that in many of the specimens on the trees that have been severely "stung" by the Curculio, the eggs have failed to produce the young, and the fruit will come to perfection. Why this should be the case I am at a loss now to say, but hope to be able to define another season.

Added to this its enormous productiveness, and we have in it a plum on which we can depend for a crop after the Curculio has taken its share, where jarring the tree is not practiced. I believe thinning the fruit in most seasons will have to be resorted to.

In *early bearing* it is without a rival, as it will, in many cases, bear fruit in the nursery rows the second year from bud.

In *color* it is a deep blue, with a fine heavy bloom, that gives it a handsome appearance which will make it sell in any market at sight.

Its *keeping qualities* are remarkable, beating Coe's Golden Drop in this respect. Last year I had about a peck of the fruit sent to me by express from New Brunswick, and after this long carriage, at the expiration of one month from the time of taking from the tree they were in a perfect state of preservation.

In *quality* I would class it as at least *good*. On this point Mr. Sharp says: "If I were to express the popular opinion here, I should say it is first-class, as nearly all prefer to eat it in preference to all the finest plums; and perhaps I grow as fine plums as are grown in the world by a method of my own, bending them down in Fall so that the snow covers them, and by fair training and close pruning, get very large and high colored fruit. But I cannot say that it equals the McLaughlin or some other fine plums, although I frequently eat it in preference where they grow side by side."

For *hardiness* there is nothing in the list of good plums at all approaching it. On our grounds this spring the terminal buds were in every instance in perfect condition, when the Bradshaw, within a few feet of them, was killed to the ground, and the Lombard badly injured.

I have learned that an orchard of one thousand trees has been planted at Dominion City, Manitoba, and the trees have stood the last two winters there perfectly. I again quote Mr. Sharp where he says: "In hardiness they are unrivalled, as it originated 50 or 60 miles north of Woodstock, where I found it bearing great crops unprotected. This is the more remarkable when I tell you that we are at Woodstock north of the isothermal line upon which *any* cultivated plum will stand up and bear fruit. It will, with fair treatment, be the means of furnishing all sections and soils where civilized man resides in the north with an abundance of fine plums that the best judges would eat." He further adds: "I stake my character as a skilled Pomologist in recommending this plum."

And I would say in conclusion, that I believe this variety to be worthy of very extended trial, not only in the colder parts of our country, but where the very best and tenderest varieties succeed.

GEO. LESLIE, jun.

MOST PROFITABLE STRAWBERRIES FOR MARKET.

BY A. M. SMITH, ST. CATHARINES, ONT.

The most profitable varieties of strawberries for market depend greatly on the markets to be supplied and the distance the cultivator is from market. Formerly the Wilson was considered by most growers the only strawberry fit for market, and many cling to the idea still; and perhaps, taking all parts of the country, and considering all of its good qualities—its hardiness, productiveness, shipping qualities, &c.—there is no other variety that will excel it in its season. But, for local markets, and markets where size and quality are taken into consideration,

there are many varieties which will pay better. Some varieties are much earlier, some later, some larger and more attractive in appearance and better flavored; and I think it just as absurd to claim the Wilson as the only market berry as it would be to claim the Baldwin as the only market apple, because it is the best shipper. Besides, when we can have as good a berry a week earlier and another a week later, it is a great advantage, not only to the producer but to the consumer, to have a succession of varieties, and thus prolong the season. In growing berries for profit, some people forget that it is not always the variety that produces the most fruit, or even sells for the most money per acre, that is the most profitable. For instance, if an acre of Wilson's produces say 3,000 quarts, and sell for 10 cents per quart, that is \$300, and it costs a cent a quart to pick them, \$30, and \$20 for crates and baskets, there would be more profit in an acre of Dominions, yielding 2,000 quarts and selling at 15 cents per quart, \$300, because there would be a saving in picking of 1,000 quarts, besides baskets and crates, transportation, &c., which would amount to about \$20. My experience with these two varieties would be in just about that ratio; and I think there would be a greater difference still with the Sharpless in some of our large towns and cities, where people are willing to pay fancy prices for extra fruit. In regard to early varieties, we all know that the first fruit of the season, particularly strawberries, brings the best price; and when you can get a berry that will produce as much fruit as the Wilson, and get it into market four or five days ahead of that variety, you certainly have a more profitable one. And I am quite sure we have at least one or two varieties that will do this: the Early Canada for one, and one of

Arnold's Seedlings for another, though the latter is not quite firm enough perhaps for shipping long distances. Again, if we can get a berry that will produce as much fruit, and sell for as much money at a much less cost of production and cultivation, we can make a profit in that direction; and I think we have this in the Crescent Seedling, which, I believe, will produce more fruit at less expense than any other variety yet tested. It should be called the Lazy Man's Berry, for when once started it will almost take care of itself. I have fruited several new varieties the present season, which, I think, will take a front rank as profitable for market where they will not have to be shipped too far. Among these are two or three sent out by our veteran hybridizer, Charles Arnold. One has already been mentioned as an early kind. There are two or three more, which, for productiveness, I think, are fully up to Wilson, while for size and beauty of appearance they are head and shoulders above it; but, like most large berries, they are not firm enough for long shipment. In regard to their flavor, that depends upon tastes: those who admire a tart, sprightly berry would not be satisfied with them perhaps, while those who like bannanas would. But flavor in strawberries, in a money point of view, is of but little consequence: it is size and color that tells. But if flavor is desired in connection with the other good points, I think we shall get it in the Bidwell, which I regard as a very promising variety. There is another new one clamoring for public favor, called the Manchester, said to be enormously productive and of excellent quality. I have only fruited it enough to judge of the quality, which is good. If asked which of all the strawberries I have grown combine in the greatest degree the excellencies of size, color, flavor,

firmness, and productiveness, I should say the Bell. I have only fruited it one year, however, and may be obliged to change my mind another year, as we often do with new kinds. For a late berry to ship long distances, I know of nothing better than the Glendale. I might mention the Windsor Chief and Miner's Great Prolific as very fair market berries, the latter perhaps a little soft for long shipments, but both productive and showy berries.

But, without taking more of your time, I will enumerate what I consider the most profitable, hoping to hear the experience of others with them. For distant markets, I would take Early Canada, Wilson, Sharpless, Bidwell, and Glendale; and with these, for near markets, I would take Arnold's Seedlings, Miner's Prolific, Crescent Seedling, and Dominion.

GOOSEBERRIES AND OTHER FRUITS AT CAMPBELLFORD, ONT.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

DEAR SIR,—I forward you by express to-day a sample of two varieties of gooseberries. I got the cuttings originally from the garden of the late Rev. Dr. Buchan, of Stirling, some eight or ten years ago. They were said to be English varieties that did not mildew. I felt interested in them and tried them. So far they have never shown any signs of mildew, and I have had them bearing for about eight years. They yield much heavier than Houghton or Downing; in fact, I do not consider the two latter worth growing as compared to the former. They overbear with me every year; you will see from the branches sent that they are overbearing this year, also, and consequently there is but little growth of new wood, the bushes yielding eight to ten quarts each, and they sell for one half more than Houghtons.

On young and cultivated plants, not allowed to overbear, I have had them more than double the size of those sent, which are smaller than usual, owing to

inferior cultivation, &c., and no manuring the past three years.

The heaviest crops of strawberries I ever raised never paid anything like as well as these gooseberries.

I intended to exhibit them at Trenton at the late meeting of the F. G. A.; but it was raining that morning, and consequently too good a day to lose, as I set out 3,000 cabbage and cauliflower successfully.

Apples in Northumberland Co. are a failure, and will be very scarce. The fruit did not set properly. There was any amount of blossoms.

Pears are also a poor crop. Cherries none. Plums none. Currants and gooseberries good. Strawberries a partial failure. Raspberries, tame and wild a failure.

Yours truly,

J. W. J.

P. S.—The gooseberries sent are not yet quite ripe.

The sample of gooseberries came safely to hand. The fruit was not sufficiently ripened to enable one to form an opinion of their quality, but the fruit and leaves exhibited no sign of mildew, and the branches were indeed heavily laden. There is no question but that the plants are exceedingly productive. One of the varieties bears some resemblance in form to the well known Whitesmith; the other is more decidedly oval in shape, and the color more of a yellow tint.

We require gooseberries of larger size and better in flavor than either the Houghton, Smith's Improved, or Downing, and which will thrive in all soils and locations. The English varieties are subject to mildew in our climate, and cannot be successfully grown here, except in a few favored localities, where there is more than usual humidity of the atmosphere. The Downing gooseberry is the largest of the American varieties that has been disseminated. The Fruit Growers' Association gave a plant of this variety, some years ago,

to each of its members, and the general testimony has been that although inferior in size and quality to the English varieties, it was not as subject to mildew; indeed, with rare exceptions, it was exempt from that destroyer. But we want something better, and everything that gives indication of being a step in this direction should be thoroughly tested. It may be that these two which we have received from Campbellford will be found to suffer from mildew when grown in other localities; but if they do not, they certainly are worthy of wide dissemination.

REPORT FROM MUSKOKA FALLS.

I have received three numbers of the *Canadian Horticulturist*, also Annual Report for 1880, and must say they are worth the money spent; they are read with much interest as well as profit. The grape vine, Moore's Early, I received has made very little growth, owing to the weather being cool. I have two Moore's Early, one Pocklington and one Champion; none of them have done well so far. They are all planted in a sunny exposure, and the soil is tolerably rich. I don't care to make it too rich, as I like well ripened wood to stand our cold climate. The Flemish Beauty Pear, which was planted this last spring, has made very little growth. The Plum has done fairly; how it will do I shall report again. My father has several apple trees bearing this season—five years from planting; they are the Haas, St. Lawrence, Peach Apple, Hawthornden, Alexander, Golden Russett. He has several grape vines, the Clinton, Agawam and the Concord; two others, names not known.

I shall report again.

Yours respectfully,

HARRY CLIFFORD.

Muskoka Falls, July 31, 1882.

SUMMER MEETING OF THE FRUIT GROWERS' ASSOCIATION OF ONTARIO.

This meeting, which was held at Trenton, was exceedingly well attended, and the discussions were deeply interesting and animated throughout. Our short-hand reporter was present, and took down the various items of information, and will have them fully written out so that they will be given in their completeness to all our members in the Annual Report for 1882. The programme as published was nearly all gone over, and many valuable papers on most of the subjects were presented, which will also appear in full in the Report.

The citizens of Trenton and vicinity attended the meetings in large numbers, and through their Mayor invited the members to dine with them on the evening of the first day. This social re-union was a most enjoyable occasion, enlivened with sentiment and song and many earnest and telling speeches. The second day they arranged an excursion for the members to Picton and the famous Sand-banks, thus enabling them to have an opportunity of inspecting the fruit-producing capabilities of Prince Edward County. After returning from the excursion, the evening was spent in the discussion of shrubs and ornamental plants suited to the climate of that section, and desirable to be planted for the adornment of our country homes.

The Association adjourned at the close, to meet in Kingston on Tuesday, the 19th day of September next, much gratified with the kind attentions they had received, and feeling that it had been a very instructive and enjoyable occasion.

CAULIFLOWERS.

Among the unsolved problems which still puzzle the minds of the intelligent American market gardeners, stands prominently the one how to succeed every year in raising maximum crops of well-developed Cauliflowers. The practical and trained gardener gives himself no trouble of mind about growing paying crops of early Cabbages, Lettuce, Beets, or Onions, with the present well-established practices now in common use. But with Cauliflowers the matter is different. They are capricious, becoming very responsive to good treatment one year, while the next year the crop, grown with the same care, results in failure. Very often, not more than fifty per cent. of the number planted will make large, compact heads. This uncertainty is not in consequence of any neglect or oversight in preparing the ground, nor in the methods of cultivation, for I have known dozens of instances of failure where the ground was rich and the culture thorough, from planting-time to the close of the growing season. This serious and expensive obstacle has been partially overcome, of late years, by the introduction of some newer varieties, which are surer to head than the older kinds under the same treatment.

In growing Cabbages, one may get a fair crop with light manuring and indifferent cultivation. But it is a waste of time and money to risk this plan with Cauliflowers, no matter whether the old or newer varieties are planted. To start right, the soil *must be deep, mellow, and rich*. This will be the first step toward insuring success in raising a crop of full-sized Cauliflowers.

For the fall crop, the seed is sown, in the latitude of New York, from the first to the fifteenth of May, in a seed-bed in the open ground. The rows are usually a foot apart, and the seed

sown thickly and covered lightly. When the young plants come through the surface they are very frequently attacked by the "black fly," and, unless these are checked, they will destroy every plant. My plan is, and has been for years, to soak some tobacco stems in water, and add to this some soft-soap and urine. With this mixture, diluted with water, the plants are syringed early in the morning, and then dusted with air-slacked lime. One or two applications of this mixture, in the way described, never fail to save the plants. It is simple, and not expensive.

In former years, the varieties which were generally grown included the Half-Early Paris, Early Paris, Early London, and Walcheren. Of late years, the Erfurt Early Dwarf, Early Snowball, and the Algiers, have taken the place of those named first, and, on my own farm, and wherever I have seen them growing, I have become thoroughly satisfied that they are more reliable for a crop. While they attain an equal size, they are fully up to the standard in quality. In a lot of 3,000 plants of the Algiers planted on my farm last year, over eighty-five per cent. grew to full size, and made large, firm, compact heads, many of them measuring eighteen inches in diameter.

As mentioned before, to grow Cauliflowers to full size, the soil must be rich and mellow. We usually plant them on ground after early Potatoes. The ground receives a liberal dressing of manure in the spring, at the time of planting the Potatoes. The Potatoes are dug and marketed early in July, after which the ground is again manured, ploughed, and harrowed. The plants are then set out in rows two and a half feet apart, and two feet apart in the rows. They are planted with the ordinary dibble, in precisely

the same way that Cabbage plants are set. From this time on, the surface of the ground is kept loose and free from weeds and grass—in the open field by horse-tools, and in the garden with the common hand-hoe.

The time of planting Cauliflowers for fall and early winter use, in the Middle and Northern States, may be extended from the end of June to the latter part of July, and even up to the first of August. As a matter of course, common sense would dictate that the plants should be set out when the weather is cloudy and moist, and the soil damp. Cauliflower plants are not so hardy as Cabbage plants, and will need a trifle more care when set out in the garden or open field. Once started, they will grow rank and thrifty. When grown solely for home consumption, it is the best plan to set part of the plants on or before the first of July, and the balance a couple or three weeks later.

In the latter part of September, when the heads are forming, they need some protection from the hot sun. If left exposed, many of them will "button," as gardeners term it. A simple, effective, and cheap method of avoiding this is to go through the growing Cauliflowers, and, when there is a head forming, turn a few of the long outside leaves over the centre or head. By doing this they will grow compact, and become more sightly and valuable, either for home use or market purposes.
—*American Garden.*

A GOOD WAY OF COOKING ONIONS.—It is a good plan to boil onions in milk and water; it diminishes the strong taste of that vegetable. It is an excellent way of serving up onions to chop them up after they are boiled, and put them in a stewpan with a little milk, butter, salt and pepper, and let them stew about fifteen minutes. This gives them a fine flavor, and they can be served up very hot.

THE LINDLEY GRAPE.

This superior variety must have been a great favorite with its originator, for he christened it after one of England's greatest botanists and horticulturists, the illustrious author and editor, John Lindley. Had Mr. Rogers given us only the Lindley grape, his name would have been famous; yet this, the best of all his valuable seedlings, is scarcely known to the masses. It has been crowded aside and overlooked, while those inferior were applauded. Mr. Barry says it is the *best red grape we have*. Mr. G. W. Campbell gives it preference over the Wilder, Salem, Merrimack or Agawam. Mr. T. S. Hubbard thus describes the Lindley:—"Bunch medium long, sometimes shouldered; berries large, red or Catawba color. Flesh tender, sweet, with high aromatic flavor. Very healthy, vigorous and hardy. Ripens with Delaware. Best quality for table or wine. It is a very good keeper, with firm, tenacious skin. Resembles Catawba in some respects. Is here regarded as one of the best, if not *the* best, of Rogers' Hybrids. Should be more extensively planted." President T. T. Lyon says the Lindley is a vigorous and productive grape, of good quality, but little grown in Michigan. Of course it is but little grown. Probably not one fruit grower in one hundred there ever saw it.

Since writing the above, I notice the following in the *Rural New Yorker* from Marshall P. Wilder:—"From the first introduction of Rogers' grapes I have considered the Lindley one of the most reliable varieties. Its quality is but little below that of the Delaware with me; while in size, beauty, vigor and hardiness it is superior. As a proof of its excellence, I selected samples of both, taking small berries of the Lindley, so as to have them in appearance as much alike as possible, and had

them tested by connoisseurs. Nine out of eleven persons preferred the Lindley. —*Prairie Farmer.*

THE RELATIONS OF FORESTRY TO AGRICULTURE.

BY JOHN A. WARDER, M.D.

[*Journal of American Agricultural Association.*]

The plodding farmer of our country will ask what possible relation can exist between the wild, unbroken forest and the smiling, fruitful farm. Nor is such a question at all surprising, especially from any of that large class of American farmers who have spent their lives and bestowed their strength in the laborious efforts connected with the clearing of our broad tracts of arable land. Most naturally, and in all simplicity, may one of the pioneers of our country ask such a question? These forests have been an obstruction to his progress; he has been taught to consider them hindrances to agriculture that must be removed at any cost, before he can bring into play the very first appliances of his art! Yes, truly, they are so; and yet it is equally clear to those who can look beyond the limits of the corn field, that most important relations do exist between the so very different conditions of the earth's surface, as are seen in the forest and field. Their relations are manifold and most intimate, and the dependence of the latter upon the former becomes more and more important, and is more and more manifest, as we advance in our study of the scope of the broad field of agriculture, and we appreciate that forestry is indeed, but a province of agronomy—and that the one is embraced by the other—of which it is a most important component part. Thus we may learn the relations of forestry to agriculture.

Let us reply to the query by asking: What were agriculture without forestry? * * * Simply, an impossi-

bility; or, at the best, a constantly increasing struggle against difficulties and hindrances whenever in any extensive region the transformation of the natural woodlands into open tillage fields passes beyond a certain limit. To that point, be the ratio greater or less, according to the natural formation and surroundings, as well as the breadth of the territory in question, forests are a stern necessity, and they are an absolute requisite to our permanent success in any well regulated system of agriculture.

And why so! is it asked? * * * Because forests modify the climate; because they are the great regulators of the temperature and of the moisture of the atmosphere about us, and these are elements of necessity to our success in the management of vegetable life, for which agriculture exists.

Forests are the reservoirs and the conservators of moisture, and the source of continued supply to the springs and streams and rivers of the continent. Without their presence, in due ratio, these essential and life-giving currents would soon suffer in their continuous flow, and would eventually disappear, leaving desolation in their track.

Mahomet was right when he uttered that forcible apothegm—"The tree is father to the rain," by which he meant, of course, trees in the aggregate. * * * Trees in forest masses attract, receive, and retain, and then gradually diffuse, moisture. The precipitated water is thus husbanded instead of being wasted by rapidly escaping, as it must do, from a bare slope, and carrying with it the accumulations of a soil that has required ages in its preparation for our use.

The true and proper forestal conditions of the surface of all well-regulated woodlands, render mountain forests the especial guardians and reservoirs of

moisture, to supply the springs and streams and rivers of the world.

Locally, woods of greater or less extent exercise a most happy influence by breaking the force of the winds, and thus, in a marked degree, they modify the climate; they provide a kindly shelter to our crops and to our cattle from the rude blast, and from its chilling influence produced by the increased evaporation.

In this respect it is surprising how great benefit may be derived from single lines of trees. This is still more manifest when wider strips are planted, as shelter-belts around the farms in the broad expanses of an open country, like that of our Western prairies.

Intelligent nations who have learned to appreciate the value of forests, and who have acquired the knowledge that enables them to build up and to maintain a well-regulated system of woodlands, endeavour to keep from one-fifth to one-fourth of their superficial area covered with trees. These are best and most effective in their climatic influences when they are properly distributed, but it often happens that extensive tracts are devoted to tillage, while the forests are clustered in large masses on the crests of hills and on mountain ranges which are not adapted to farm crops.

In the brief period of our occupation, the energy of our people and the demands of our civilization have accomplished a most terrible and wasteful destruction of the beautiful forests bestowed on our land by the bountiful hand of the Creator. Counting upon what we have considered an inexhaustible supply of woods, we have wasted them sadly—and now we have reached a point where it becomes us to halt. Moreover, it is important for us to recognize that, while clearing the land for our farms, we have also culled

out the best of the trees from the remaining forest which is thus greatly diminished in value; and already, in many places, the shrunken streams give us warning that we have approached the point of danger to the climate. Meanwhile, there has been no reparation to the woods, the destruction of the young trees caused by the browsing and tramping of cattle, and the introduction of grasses in place of the natural undergrowth, have not only destroyed all hopes of natural reproduction, but have so changed the physical conditions of the soil and atmosphere that even the trees, which have escaped our cupidity and remain in possession, are themselves suffering from the change—they are dying in large numbers, and compel us to extend our inroads upon the forest areas by their removal.

Now is the time to begin at least the *conservation* of our woodlands, and to aid them in the process of self-renewal. In this work natural forces most happily come to our assistance—the bountiful provision of nuts, acorns, and other seeds, is sown with a liberal hand, and we may count upon a full supply of young trees to maintain the succession, if we but furnish them the needful protection. Where they do not come in sufficient numbers, it is an easy matter to sow or plant such as may be most desired and most profitable; and we may also have to remove some of Nature's planting which are of undesirable kinds; but we must carefully exclude all animals from the woodland, which should never be used as a pasture-field. This is the first great axiom of Forestry.

In our beginnings of the future systematic forestry of America, we must all soon realize our ignorance of the subject; and with many of us this need of information extends even to a want of knowledge in regard to our own native trees themselves.

PICKLES.

Thrifty housekeepers are pleased to have an abundance of pickles, as they are convenient to help make out a variety when one is obliged (as is often the case) to get up a meal unexpectedly. They are delicious, and wholesome too, if properly prepared. It is a mistaken notion that fruit which is too poor for canning or for other uses, will do well enough for pickles. A good quality of fruit should always be chosen, large and well ripened, but not mellow. Perhaps the most generally used of all fruits for pickles are peaches and pears. A thin peeling should be taken from the latter with a sharp knife, and, if large, cut in halves and the core removed. If small they may be pickled whole and the stems left on if desired. The peaches must also be pared or rubbed very thoroughly with a flannel cloth to remove the fuzz or down which is very unpleasant to the mouth.

A very good receipt for a plain, sweet pickle, is this: To every quart of good cider vinegar—and nothing except good vinegar should ever be used—add two heaping teaspoonfuls of white or best brown sugar, with two level tablespoonfuls of ground cinnamon, and one of cloves. Tie the spices up loosely in a thin piece of muslin and put them along with the sugar into the vinegar, and heat all together. Add some of the fruit and cook till tender, then remove to a fruit jar; add more of the fruit, and so continue till all has been cooked and removed to the jar, then turn the boiling vinegar over. After three days turn off the vinegar and boil it for half or three-quarters of an hour, turn again over the fruit, then tie a cloth over the top and set away in a dry, cool place. There must always be vinegar enough to fully cover the fruit.

Cauliflowers and sweet apples also make delicate and wholesome pickles.

The cauliflower should have the leaves stripped off and the heads broken in pieces, steamed till partially tender, and then served as above. Sweet apples, unless a very tender kind and mellow, should also be steamed a few moments before putting into the vinegar. For the latter, a vinegar not quite so sweet is preferable. About one coffee-cupful of sugar to every quart of vinegar will be found to make a very delicate and toothsome sauce. Green tomatoes make an excellent pickle if properly and carefully put up, but quite worthless otherwise. They are more difficult to keep than most other fruits, but in country households, where cider vinegar is abundant and cheap, this difficulty is easily obviated. Gather large, well-grown tomatoes that have turned white, but none that are beginning to soften or turn red; slice through the middle, and put into a weak brine. Let them lie in this over night; then take out, rinse in cold water, and steam a few moments; then put into clear, cold vinegar and cook till tender, or till a straw will pierce them easily; then drain and put into a pickle jar. Throw out the vinegar in which the tomatoes have been cooked; take enough fresh to cover them; add sugar and spices about as for peaches and pears, boil and turn hot over the fruit. Pickled in this way tomatoes will keep for any length of time desired.

Ripe cucumbers make a very good, sweet pickle also. They must be pared, cut in quarters and the inside scraped out, then treated much the same as tomatoes. To make green cucumber pickles, cut—not break—the cucumbers from the vines; wash them carefully and put into a jar; pour boiling water over them for three or four days in succession, then put into the jar in which they are to be kept, and pour boiling vinegar over them. Let them stand for a week, then turn off the old

vinegar and add new, boiling hot. Cover with horse-radish leaves, and if the vinegar be good they will keep for a year. Or they may be laid down in salt; then when wanted for the table freshened with boiling water turned over them several successive days; then put into cold vinegar with a very little sugar, and in a couple of days they will be ready for the table.

The following is a mixed pickle, or piccalilli, of which many are very fond: Chop one peck of green tomatoes, add one pint of salt, cover with water and let stand twenty-four hours. Squeeze out this juice, put in fresh water and drain off. Chop one firm head of cabbage, then chop all together fine. Put into a kettle, cover with equal quantities of water and vinegar, bring to boiling heat, and drain off. Add the skins of ten peppers, one tablespoonful of cloves, one of allspice, half a pint of mustard seed, six onions, one pint of molasses, and half a pint of grated horse-radish. Put into a jar and cover with cold vinegar.—*Country Gentleman*.

PACKING APPLES.

I have before made allusion to the discreditable manner in which some parties pack apples for the English market. Since then the complaints have grown louder and more frequent, and always coupled with the statement that our Canadian neighbors thus far pack fairly. Investigation, I am sorry to say, shows these complaints to be, in many cases, well founded. All, of course do not resort to this reprehensible method, but all should feel an interest in exposing and correcting the evil as far as may be, for the sake of our common reputation. It will only result in hurting the trade, and this trade is already of such dimensions as to be worth preserving, apples now forming an important item among our exports.

It is officially stated that 1,203,670 barrels of apples were received in England from the United States during the year 1880. These figures will surprise many, but there can be no doubt that they may be greatly increased if some regard be paid to the much neglected "golden rule," which is just as good in trade as anywhere else.—*Rural New Yorker*.

HOW TO COOK SALSIFY.

Some of our correspondents say that they have followed our advice to grow Salsify—or Oyster Plant, as it is often called—and that we should now tell them what to do with it. To those unacquainted with the plant we may say that it is perfectly hardy, and if any has been left in the ground, it will be just as good in the spring, or if dug during a thaw. The roots, whether of Salsify, or of Scorzonera, often called Black Salsify—have a milky juice, which, when exposed to the air, soon becomes brown. In preparing them they should be quickly scraped, to remove the skin, and at once dropped into water to prevent discoloration. In the following recipes it is presumed that the root has been thus prepared.

Stewed Salsify.—Cut the root into convenient bits, and throw them at once into water enough to cover them. Add salt and stew gently until quite tender, pour off the water, add sufficient milk to cover, a good lump of butter, into which enough flour to thicken has been rubbed, season with pepper. When the butter is melted, and the milk boils, and is sufficiently thickened, serve.

Salsify Soup is essentially the same as the foregoing, only adding a large quantity of milk to form a soup, and omitting the thickening. To increase the resemblance to oyster soup some add a little salt codfish picked fine.

Fried Salsify.—The root cut cross-wise in halves or shorter, is boiled until quite tender; remove from the water and allow to drain. Dip each piece in batter, and fry quickly in plenty of hot lard to an even light brown.

Salsify Fritters.—Boil tender and mash fine. Mix with beaten eggs and flour, thin enough to drop from a spoon, and fry as other fritters. Some prefer to mix hard enough to make into balls, and fry on a griddle, with very little fat, browning one side at a time.—*American Agriculturist.*

PRESERVING GRAPES FOR WINTER.

As autumn approaches, we receive a number of inquiries as to the method of preserving grapes for winter use. It is not generally understood that there is as much difference in grapes, with respect to their keeping, as there is with other fruits. No one would expect to keep Early Harvest apples or Bartlett pears for the holidays, and it is so with the most generally cultivated grape, the Concord; it can not be made to keep in good condition long after it is fairly ripe. With other varieties it is different. There are some localities where that grand old grape, the Catawba, can still be cultivated with success, and, where this is the case, one need hardly to look for a better variety. The Isabella still succeeds in some places, and is a fair keeper. Better than either, if not the best of all grapes, the Iona gives good crops in some places, as does the Diana. Where either of these, the Isabella, Catawba, Iona, or Diana, can be grown, there is no difficulty in keeping them until the first of the New Year, or later. The grapes are allowed to ripen fully; they are picked, and placed in shallow trays, in which they remain in an airy room to "cure." The operation of cur-

ing consists merely in a sort of wilting, by which the skin becomes toughened, and will not break when the fruit is packed. The clusters, when properly "cured," are packed in boxes, usually of three or five pounds each. The bottom of the box is opened, the larger clusters laid in carefully, and smaller bunches packed in upon them in such a manner that it will require a moderate pressure to bring the cover (or, properly, the bottom), of the box to its place, where it is nailed down. The pressure used is such that when the top of the box is opened, the grapes next to it are found to be somewhat flattened. The fruit must be pressed in such a manner that it can not shake in travel, and this can only be done with grapes the skin of which has been toughened by being properly cured. If clusters were placed in the box as they come from the vines, and subjected to the needed pressure, the skin would crack around the stems, liberating the juice, and the whole would soon pass into decay. Towards Christmas and New Year's, many tons of the varieties we have named come to the New York market in excellent condition. New varieties of grapes, of great excellence, have recently been introduced, but we have yet to learn as to their keeping qualities. With the Concord and related varieties, the skin is too tender to allow of long keeping, and it does not seem to toughen in the curing process. Still, with these, the season for home use may be considerably prolonged. The late Mr. Knox found that he could keep the Concord for some time by placing the thoroughly ripened clusters in baskets or boxes, with the leaves of the vine below and between them. We do not know how long this will keep these grapes, but we saw some in excellent condition several weeks after the harvest was over. Those who set grape-vines should be

aware that no one variety will meet every requirement, and that the earlier the variety, the less likely it will be to keep.—*American Agriculturist*.

WHAT TREES TO PLANT FOR FUEL AND TIMBER.

The attention of our people in the older States is being very properly turned to planting rocky ridges and worn out pastures with forest trees. This work is done by those who have no expectation of cutting the timber themselves, but with a view to improve their property for future sale, or for their heirs. These old pastures now are worth \$10, or less, per acre. Forty or fifty years hence, covered with heavy timber, they would be worth \$300, or more, per acre. Two elements may safely enter into this calculation of the profit of tree planting: the steady growth of the trees and the constant increase in the price of fuel and timber. There is great difference in the price of the varieties of wood, but still more in the rapidity of their growth. Hickory grows more rapidly than White Oak, and in most markets is worth a quarter more for fuel. Chestnut grows about three times as fast as the White Oak, and for many purpose makes quite as good timber. It is in great demand by ship-builders, and cabinet-makers. The Chestnut, the Tulip Tree, and the Hickory, attain a good size for timber in 20 to 25 years, and the Spruce and Pine want about 50 years. The Maples grow quite rapidly, and are highly prized, both for fuel and for cabinet purposes. On light sandy land, the White Pine will grow rapidly, and cannot fail to be a good investment for the next generation. As a rule the more rapid growing trees, if the wood is valuable, will pay better than the Oaks.—*American Agriculturist*.

NARCISSUS.

The Narcissus is a very fine class of early blooming flowers including the well known Daffodil and Jonquil. Most of the varieties are hardy, and should be planted in the autumn, like the Hyacinth, but may remain in the ground a number of years, after which they will become so matted together as to make a division of the roots necessary.

The *Single Narcissus* is extremely hardy and popular as a border flower, and the central cup being of a different color from the six petals, makes the flower exceedingly attractive. Some have the petals of a light yellow and the cup orange; others have the petals white and the cup yellow; while the Poet's Narcissus (*Narcissus poeticus*), sometimes called Pheasant's Eye, is snowy white, the cup cream color; with a delicate fringed edge of red, which gives its latter name. The *Double* varieties are very desirable. The common Daffodil is well known under that name, though not so well by its true one, *Van Sion*.

The most beautiful class of the Narcissus family, however, is the *Polyanthus Narcissus*. The flowers are produced in clusters or trusses of from half a dozen to three times this number. Like the others, they show every shade of color, from the purest imaginable white to deep orange.

The *Polyanthus Narcissus* is not quite hardy in this climate, unless planted in a sandy soil, and well covered before winter, and then often fails; further South it does well. For flowering in pots in the house the *Polyanthus Narcissus* is unsurpassed, and nothing can be more satisfactory for this purpose. The *Jonquils* are also desirable for winter flowering. Three or four may be grown in a small pot. Try them in the house next winter; you will find nothing sweeter. The *Polyanthus Narcissus*

will also flower well in glasses of water, like the Hyacinth, and it is desirable to grow a few in this way, yet nothing looks so natural and nice as a good healthy plant in a neat pot of earth, and no other method leaves the bulb in a sound, healthy condition for the next season. The Polyanthus Narcissus succeeds admirably in gardens where winters are not very severe, and is prized for house culture everywhere. The Chinese, of California, brought over bulbs, and they created a great wonder on the Pacific coast and elsewhere, and were called the Chinese National Flower, though the same could be had at any respectable seed-house in America.—*Vick's Floral Guide.*

MELON CULTURE.

An Ohio farmer says:—"During the Winter and Spring I gather together all the fine manure I can, such as hog manure, with the cobs raked out, hen manure, barnyard scrapings, etc. After the melons are planted I load this mixture on the waggon, and if not wet enough I throw a few pails of water on it, drive into the field and straddle one row, and with another hand take two rows one on each side of the waggon and put a small shovelful of this mixture on each hill. By soaking the seed overnight before planting, it will be necessary then to examine a few hills in the course of five days, to see if they are making their way through the inch of dirt that was first covered over the seed; if so, then the manure should be shoved to one side with the back of a rake. After the melons are beginning to get the third leaf, I take a mixture of two-thirds of slaked lime, one-third plaster, and dose each hill with about half a spoonful, getting the greater part on the dirt around the plants. With this method I get 1,000 melons per acre, and always get a premium at our county fairs."

THE CULTURE OF STRAWBERRIES.

Messrs. Ellwanger and Barry of the Mount Hope Nurseries, at Rochester, give the following directions in their Strawberry Catalogue:

The Soil and Its Preparation.—The strawberry may be successfully grown in any soil adapted to the growth of ordinary field or garden crops. The ground should be *well* prepared, by trenching or plowing at least eighteen to twenty inches deep, and be *properly enriched* as for any garden crop. It is unnecessary to say that if the land is wet, it must be thoroughly drained.

Season for Transplanting.—In the Northern States, the season for planting in the spring is during the months of April and May. It may then be done with safety from the time the plants begin to grow until they are in blossom. This is the time we prefer for setting out *large plantations*.

During the months of August and September, when the weather is usually hot and dry, *pot-grown* plants may be planted to the best advantage. With the ball of earth attached to the roots, they can be transplanted without any failures, and the trouble and annoyance of watering, shading, &c., which are indispensable to the success of layer plants, are thus in a great measure avoided.

GARDEN CULTURE.

To Cultivate the Strawberry.—For family use, we recommend planting in beds four feet wide, with an alley two feet wide between. These beds will accommodate three rows of plants, which may stand fifteen inches apart each way, and the outside row nine inches from the alley. These beds can be kept clean, and the fruit can be gathered from them without setting the feet upon them.

Culture in Hills.—This is the best mode that can be adopted for the garden.

If you desire fine, large, high-flavored fruit, pinch off the runners as fast as they appear, repeating the operation as often as may be necessary during the summer. Every runner thus removed produces a new crown at the centre of the plant, and in the fall the plants will have formed large bushes or stools, on which the finest strawberries may be expected the following season. In the meantime, the ground among the plants should be kept clear of weeds, and frequently stirred with a hoe or fork.

Covering in Winter.—Where the winters are severe, with little snow for protection, a slight covering of leaves or litter or the branches of evergreens, will be of great service. This covering should not be placed over the plants till after the ground is frozen, usually from the middle of November till the first of December in this locality. Fatal errors are often made by putting on *too much* and *too early*. Care must also be taken to remove the covering in spring just as soon as the plants begin to grow.

Mulching to Keep the Fruit Clean.—Before the fruit begins to ripen, mulch the ground among the plants with short hay or straw, or grass mowings from the lawn, or anything of that sort. This will not only keep the fruit clean, but will prevent the ground from drying and baking, and thus lengthen the fruiting season. Tan-bark can also be used as a mulch.

A bed managed in this way will give two full crops, and should then be spaded or ploughed down, a new one having been in the meantime prepared to take its place.

FIELD CULTURE.

The same directions with regard to soil, time of planting, protection and mulching as given above, are applicable when planting on a large scale.

The Matted Row System—the mode of growing usually pursued—has its

advantages for field culture, but cannot be recommended for the garden. In the field we usually plant in rows three to four feet apart, and the plants a foot to a foot and a half apart in the row. In this case much of the labor is performed with the horse and cultivator.

How to Ascertain the Number of Plants Required for an Acre.—The number of plants required for an acre, at any given distance apart, may be ascertained by dividing the number of square feet in an acre (43,560) by the number of square feet given to each plant, which is obtained by multiplying the distance between rows by the distance between the plants. Thus strawberries planted three feet by one foot give each plant three square feet, or 14,520 plants to the acre.

THE LILIUM AURATUM AT HOME.

The "Queen of Lilies" is thus described by a correspondent of the *Gardener's Chronicle*:

"Coming from the south of Japan I saw for the first time the *Lilium Auratum*, a little after passing the gate of Hakoni, three days before arriving at Yokohama. They were grown in fields, as our Onions are, and quite as close to each other. As the flowers were beginning to expand the sight was magnificent, and the scent overpowering. It was much later, and far north of Tokio, that I saw them wild, coming out of the margin of the natural shrubberies, generally with a single huge blossom, sometimes two, rarely three. It is no wonder we got at first notice such quantities of them, as the bulbs are a common article of diet with the natives, and are sold everywhere as a vegetable in the markets. I have eaten them pretty often, and rather relished them, as they are, when cooked, sweet, mucilaginous, and without any taste to make them objectionable to a new comer."

BLACKBERRY CULTURE.

The home of the blackberry is in a deep sandy soil, not over-rich, the climate cool and moist rather than hot and dry. In such a soil the roots are safe from the influences of the weather, as they penetrate deep, the water in a wet season passing off readily; and the heat and drouth not reaching them to seriously affect them, unless unusually severe, then only checking the growth and shrinking the berries. Thickly mulching the ground in such case is a great help, using some vegetable material, like muck or leaf mold, which, worked afterward into the soil, is of great benefit. Partial shade from shrubs, or occasional trees, or other means of preventing the direct heat of the sun, is an advantage in our drouthy climate. Better still is a northern inclination of the ground, as it favors moisture and secures a more uniform temperature, having also the whole benefit of the soil. The only danger would be from a great growth of stalk in a moist, growing season, the wood not sufficiently maturing to withstand the cold of winter, especially if severe. This is readily avoided by pinching off with thumb and finger, the tips of the canes, which is best done when a height of three feet or more has been reached, depending upon the thickness of the stalk, as stockiness is required to sustain the weight of the fruit, thus dispensing with stakes for support. This diverts the growth into the side shoots or arms, which in like manner must be stopped when the proper length has been reached, which may vary from fifteen to eighteen inches. These laterals make an unequal growth, some reaching the proper length for stopping sooner than others; hence frequent attention is required, so that no unnecessary loss of wood results from excess of growth. If any are tardy and threaten to make too late a growth to stand the

winter, pinch them back whatever their length to give the wood a chance to harden. In this way the whole plant becomes fortified against the cold, and is the better able from its increased stockiness and shortening of length to bear its fruit, the size and quality of which will also be improved. In this operation there is nothing rash, the plant receives no shock from severe pruning; only the direction of growth is somewhat changed, favoring the parts that most need it—the laterals, which bear the fruit.

One of the faults in blackberry culture is an excess of growth or too high manuring, favoring a tendency to produce stalk and leaf growth at the expense of fruit. But while less push is required for the canes, more is demanded to round out the growing crop of fruit, the two principles, unfortunately, being in antagonism. The only course is the medium, which produces a good cane and a fair to good crop of fruit, the lack to be made up by planting closer, which the lesser growth will allow. Rank manure should be discarded, stirring lightly the surface of the ground and mulching with fine vegetable material to be finally worked into the soil, is better treatment—well-rotted stable manure, if needed, preceding the mulch. The time for applying the manure is after the fruit is set, or at the blossoming period, or, if the soil is quite poor, earlier still, which will push the canes, that can then bear it, and improve the fruit. The manure mostly exhausted, the canes will grow more leisurely and slowly, thus getting a chance to ripen their wood and favor the formation of fruit buds. Treated in this way the largest and finest berries and greatest and most profitable crops are grown. Otherwise, with the too general treatment, the berry will be small and seedy, and lacking in flavor. The excellence of the blackberry, as of other berries,

is obtained by growing it well. To develop the flavor requires a certain amount of sun. Excess of heat, however, must be avoided. It is best therefore to have the berry favored with the forenoon sun, and somewhat protected against the increased heat of the afternoon, especially the first few hours, when I have known exposed berries to get scalded. With a little attention to locality and treatment much can be done to favor this fruit.—*Country Gentleman*.

THE NEWER RASPBERRIES.

In answer to frequent inquiries, we give in condensed form some of the results of the experiments which have been made with most of the newer varieties of the raspberry, with the opinions which have been given by different cultivators as to their character and general value. Raspberry culture generally, and the production of new sorts in particular, have received much attention of late years, and deserve still more. Every owner of a garden may have a sufficient plantation of this wholesome and delicious fruit to supply his family, with no more expense and labor than he bestows on his onions and cucumbers, provided he makes a good selection of varieties and gives them as intelligent culture. He wants hardy sorts which will not be winter-killed; they must be so productive as to furnish good crops; the quality must be good, and if they are of large size they may be more rapidly picked. Another important requisite, good bearing, would be more frequently reached if cultivators would bear in mind that suckers are as detrimental to productiveness as a heavy mass of weeds is to a crop of potatoes or corn. The trouble is, they do not cut out the suckers at the right time, but they are allowed to grow till they have choked

the crop before they are thinned out. Select in spring the few shoots which are to grow, not over four or five to the hill at most, and cut out with a sharp hoe every other plant before it is three inches high, and keep all cut the season through. Again, the hardiness will be increased by planting on a well-drained soil with dry bottom.

There are nearly a hundred old sorts which have been described in books and tested in this country, some of which are perhaps as good as anything we have that is new; but the new ones may afford among their large number some better adapted to our wants. We furnish the following brief notes, with the hope that our readers may give additional information from their own experience. Among the red or suckering varieties are the

Herstine, not a new sort, but imperfectly known to cultivators, and for quality hardly equalled by any other. It is quite productive, and the berries are of large size. It is too soft for conveyance to distant markets, but excellent for home use. The chief drawback is its want of hardiness in many localities. But we find by selecting a soil, and giving it cultivation which will prevent late growing and favor early ripening of the wood, that it is scarcely ever injured beyond the tips of the shoots, and in any case laying down for winter would be a sufficient remedy.

Clarke is another sort which has been known for a number of years, but is now passing out of cultivation, on account of its moderate productiveness and the frequent imperfections of the berries. It suckers very freely, and requires the prompt removal of the suckers on their first appearance. With this care, and with pinching back the canes when half grown, it bears well. In some localities it has proved partially tender.

Cuthbert is newer, and is becoming one of the most popular of all varieties. It is regarded by prominent cultivators as the most valuable raspberry cultivated. The fruit is large, roundish-conical, red, firm, and of fair quality. It is generally supposed to be identical with Queen of the Market, or scarcely differs from it.

Turner, raised by Prof. Turner, of Illinois, is very hardy, the fruit medium or large, of fine quality, but too soft for long conveyance to market, and it appears to be remarkably adapted to many localities. It ripens early. E. P. Roe says he does not know a single good raspberry that is perfectly hardy except the Turner, which is, however, not equal in quality to the Cuthbert.

Brandywine has been a very popular market sort in Central and Southern New Jersey, and in Delaware and Maryland. Although the quality is poor and the size is not large, its bright color and firm flesh and bushy growth have been much in its favor, but its popularity is waning. It suckers enormously, and needs prompt and early thinning.

Thwack is like Brandywine, but larger, and is also poor in quality: its value is for market, for which purpose some western cultivators prefer it to all others. It suckers badly. Ellwanger & Barry describe its quality briefly in the words, "large, red, insipid."

Reliance is a seedling of the Philadelphia, and much better—hardy, vigorous and productive, quite large, firm, not high in flavor.

Montclair—raised by E. Williams of Montclair, N. J.—a strong grower, hardy, productive, berries red, firm, of fair quality. It suckers quite moderately, which is much in its favor.

Highland Hardy, valuable only for its extreme earliness; although small it

has a handsome appearance, and it is quite productive. It is rather poor in quality. Roe says "it has had its day," but it will still be cultivated moderately.

Pride of the Hudson, when in perfection, is large and very fine, but this so rarely occurs that it will be generally discarded.

Caroline appears to be between the suckering and tip-rooting sorts, suckering freely and rooting sparingly at the tips of the shoots. The fruit is orange yellow, resembling Brinckle's Orange, but not equal to it in quality. It is hardy and productive, and is much valued by some cultivators.

Marlboro is a new sort, raised by A. J. Caywood of Ulster County. It appears to be quite large, is bright, and of good quality. The canes are strong growers. It has been proved in only one locality, and needs further testing.

Lost Rubies is a temporary name for a large, fine and productive sort cultivated by Charles A. Greene of Monroe County, N. Y., the origin of which and its identity with any other sort he has not been able to ascertain. It is handsome in appearance, firm in texture, and excellent in quality. It does not resemble Cuthbert, and, although about the size of Franconia, is unlike it in character.

Among the newer Black Caps are the following:

Gregg (from Indiana), one of the largest of its class, the berries roundish oblate, black, with a slight bloom, firm, of good but not of the highest quality. A strong grower and very productive. Although not new, it is newly introduced in some places.

New Rochelle, a seedling of the Catawissa, very productive; the berries medium or large, dark dull red, firm, acid—excellent for canning. It is intermediate between the suckering and

tip-rooting sorts, the latter quality predominating.

There are some other cap varieties requiring further testing, such as the Surprise and Elsie, which are large and of bright color, Duncan's Blackcap, reputed quite large, and Hamilton Blackcap, also said to be very large and fine.

The Ontario, which originated many years ago at Fairport, N. Y., and which is a good and productive variety, failed to become popular on account of its dull color, and is now little cultivated. Nearly the same remark will apply to the Ganargua.—*Country Gentleman*.

SOME NOTES ON A FARMER'S EDUCATION.

At the Farmers' State Convention, held at New Britain, Conn., the leading topic was: "What the Farmer Ought to Know, and How he may Learn It." The following remarks are extracts from our notes taken upon the lectures and discussions:

The old view that anybody could be a farmer is passing away. Farmers are "looking over the fence" more than ever before; they observe, and imitate when it seems desirable. This awakening of thought has developed into the establishment of various agricultural schools, many of which have been unsuccessful, and for various reasons. Too much was expected of them; the teachers were not trained to their work, and the pupils, in many cases, have been educated away from the farm. The love for farming and farm life must be developed in the child. The home teachings mainly shape the farmer boy's future. Object lessons, instead of book lessons, most interest and instruct the young—and the farm with all its plants and animals offers the very best opportunities for this training of the powers of observation. Study

nature and refer to books, and not study books and afterwards refer to nature.

The great lack in the farmer's education is system and balance. In no occupation is there greater demand for independent thought and accurate judgment. To obtain these he must read the best agricultural papers, establish and attend farmers' clubs, take part in the annual exhibitions, and in every way possible meet his fellow farmers, that by so doing he may increase his knowledge.

There is much work for agriculture to be done in the common school. The apparatus required is simple and cheap, and plants, etc., are always at hand. A text-book of the rudiments of farming could be put into every common school with great advantage to every child, and as Professor Johnson remarked, we should then have "more broth and less dish-water in our schools." Scientific *methods* should be cultivated in youth; the method is as valuable as the facts. The only reason for this lack of agricultural instruction is the indifference of the people. Boards of Education and Boards of Agriculture should put their heads together and help to bring in this new dispensation. The village and city school should share in this work; the whole system leading up to the Agricultural College, where the highest and most thorough education can be obtained. As a stimulus and an aid in bringing about this system in agricultural education, schools of a few months' duration, in the winter season it may be, might be held at various points. The nation is safest only when the youth are educated thoroughly—and agriculture is on a sound and permanent basis only when the boys, and girls too, are instructed in the elements of farming.—*American Agriculturist*.

THE BLACK KNOT.

As the leaves fall away from the Plum and Cherry trees, conspicuous excrescences are frequently seen upon the branches, which, from their shape and color, have appropriately received the name of Black Knot. This is an old enemy of the fruit garden, and its ravages have been so severe in some parts of the country, especially the older sections, that the raising of Plums has been given up. Though known as a very destructive growth upon the trees for a long time, it is but within the last few years that its nature has become known beyond a doubt, through the careful and prolonged study of scientific men.

The history of the investigations into the nature of the Black Knot would make a volume of no small size, and of interest in more ways than one. The insect theory prevailed for a long time; and there seemed to be very strong indications that the Knot was similar in origin to the galls of the Oak, Willow, etc. The fact that the excrescences, especially the old ones, contained living insects, their eggs, and remains of the dead, was taken as positive evidence that the "house" they occupied was built by the indwelling insects. The Knot is now known to be of fungus origin, and therefore is related to the Peach curl, Potato rot, Wheat rust, and a long list of other microscopic plants too small to be seen, except by their destructive effects, as they prey upon the higher forms of vegetation. The fungus, or parasitic plant, was first described in 1838, but it remained for Dr. Farlow, of Harvard University, to publish a full account of the minute plant, and its methods of propagation and growth. I can do no better than to give the argument against the insect theory, or for the fungus nature of the Knot, as briefly presented by Dr. Farlow: "First, the Knots do not resem-

ble the galls made by any known insects. Secondly, although insects, or remains of insects, are generally found in old Knots, in most cases no insects at all are found in them when young. Thirdly, the insects that have been found by entomologists in the Knots are not all of one species, but of several different species, which are also found on trees that are never affected by the Knot. On the other hand, we never have the Black Knot without the *Sphaeria morbosae* [the scientific name of the fungus], and the mycelium of that fungus is found in the slightly swollen stem, long before anything that could be called a Knot has made its appearance on the branch; and, furthermore, is not known to occur anywhere except in connection with the Knots."

The Knots range in size from an inch to a foot in length, usually growing upon one side of the branch, causing it to bend away from that side, or twist irregularly. The parasite first makes its appearance in the spring, when the affected branch increases rapidly in size, and becomes soft in texture. The bark is soon ruptured in various places, and the soft interior comes to the surface, expands rapidly, and soon turns green. Multitudes of minute spores are formed on this exposed green surface, which fall away and are carried by the winds, etc., to other twigs, thus propagating the disease. These spores continue to be formed until late autumn, when the surface of the Knot takes on a dry and black surface; in the meantime, insects may have taken possession of the soft tissue within, and so eaten and destroyed it that at the end of the season only a thick, hard crust, or shell, remains. Another kind of spore is found in small pits and sacks of the crust, and as they form late in autumn, they are the winter spores of the fungus, and the form in which the pest is carried through the winter. These spores ger-

minate in the spring, and thus continue the Black Knot. The same Knot lasts for several years, or until the branch is killed, it spreading from the old growth up and down the branch.

The only remedy is the knife. A branch once affected is beyond recovery, and as long as it remains is a seat of propagation of the spores of the fungus. The Knots should be cut off some inches below the main part, because the wood for some distance is filled with the threads of the fungus. I have seen cases where the Knot was thought to be entirely removed by the knife, and a new one would form at the cut end of the stump, thus showing that the work was not properly done. The removed branches should all be burned, as the Knots contain spores which will otherwise become detached and spread the disease. The best time to cut the Knots is in late autumn, because, the leaves having fallen, the excrescences can be more easily seen.—BYRON D. HALSTED, in the *American Garden*.

AMERICAN APPLES IN ENGLAND.

The New York *Commercial Bulletin* lately published the following statement from Mr. W. N. White, Covent Garden, London, as to the relative qualities and desirableness of American apples for exporting to the English market:

Baldwins—Free seller; bright color preferred.

Cranberry Pippins—Sells fairly well; bright color preferred.

Fall Pippins—Bad keeper.

Fallawater—Free seller, and commands good prices in the spring.

Golden Pippins—Soft, dangerous apple; no use here this season.

Golden Russets—Free seller, and when clear makes good prices.

Gravenstein—Soft apple; dangerous.

Greenings—Free seller; well known.

Gilliflowers—Poor; should not be sent to England.

Holland Pippins—Good apple, but soft.

Jennetings—See remark against Gilliflowers.

Jonathans—When of good color, command fair prices.

Kings—Good seller, but should not be sent ripe.

Lady Apples—Sell well at high prices.

Maiden's Blush—Good apple; properly colored commands high prices.

Montreal Fameuse—Highly colored, sells fairly; green, bad seller.

Newtown Pippins—Large, selected fruit commands high prices; small, speckled fruit, bad to sell, even at low prices.

Nonpareils—Nova Scotia and Canadian always command fair prices.

Nonsuch—Soft, dangerous.

Phoenix—When clear, sells fairly; very liable to turn black on one side, which spoils the appearance.

Pomme Grise—Sells well, particularly when clear.

Pound Sweet—Dangerous.

Rambo—Medium only in price and quality.

Ribston Pippins—Good seller, but must never be sent ripe; loses its crispness, which is essential.

Roxbury Russets—Useful apple; medium price.

Spitzburgh—Good apple, but quickly decays when ripe.

Spys—Must be large to sell well.

Swaars—Must be large to sell well.

Talman Sweet—Medium apple; fair seller when large size.

Twenty Ounce—Good medium apple.

Vandeveres—Fair seller.

Wageners—Good color, fair prices.

Woodstock Pippins—Good color, good prices.

MUSLIN SASHES.—Rufus Mason, of Nebraska, says : Three years' experience with muslin sashes where the thermometer ranges from 20 degrees below zero to 70 degrees above, satisfies me of their superiority. I make a square frame of $1\frac{1}{4}$ inch stuff, with a single bar of the same size down the middle, cover it with common, heavy, unbleached muslin, paint it over with two coats of boiled linseed oil, and find it far better than glass. Have had no freezing or scalding, but better colored plants, more stocky, and better able to withstand early transplanting. After the hotbed is filled with manure, lay in the soil so as to come within three inches of the muslin, sloping exactly as it does. As the season advances, the bed will settle about as fast as the growth of the plants require it. This plan prevents the plants from becoming long-legged, which is the main cause of the slow after-growth, and in the cabbage family of so many plants failing to make solid heads.—*Michigan Farmer.*

A POTATO EXPERIMENT.—A writer in the *Rural New Yorker* says as follows : Last spring when planting my Beauty of Hebron potatoes, I planted one row through the piece as follows : I took potatoes below medium size, cut off the seed and stem ends, cut out all the eyes but two ; planted them and gave them the same care as the rest of the piece. The "seed" for the rest was of the same sized potatoes cut in two, and planted one piece in a hill about eighteen inches apart in the row. Now for the result : The first row, containing seventy hills, gave one hundred and ninety-five pounds ; one row by the side of it with eighty-six hills gave one hundred and forty-three pounds, a difference in yield per hill of over fifty per cent. in favor of the whole potatoes with two eyes. This row could be distinguished from the rest as far as the piece could be seen, until the dry weather dried up the vines. The whole piece yielded a splendid crop, as did a piece of Snowflake in another part of the field.

QUEER FARMING.—The latest novelty in the "live stock" business is leech farming, as carried out on a thirteen acre tract near New York city. The tract is

devoted to small ponds having clay bottoms, and are margined with peat. The leeches form their gelatinous cocoons in these peat margins, crawl into them at the open end, and deposit their eggs during the month of June. By September the warmth of the sun hatches out the young, varying in number from thirteen to twenty-seven from each cocoon. During the summer months the water in the pond is kept at about three feet ; in winter the depth is increased to prevent freezing the leeches. Leeches are not expensive feeders, a meal of fresh blood once in six months being their only diet. The blood is put in linen bags and suspended in the water. The leeches attach themselves to the bag and remain until gorged with the blood, when they drop into the water. The owner reports that his sales amount to about 1,000 leeches per day, the most of them going to the West and South. He makes this new branch of farming quite profitable.

KEEPING GRAPES ON THE VINES.—I have discovered that by the use of strong manilla paper bags, grapes may be kept on the vines in splendid condition long after the season for grapes out of doors has gone by. Passing through the vines, Oct. 31, three weeks after the frosts compelled me to gather the crop, and after the leaves had all fallen, I found a few clusters protected by bags that had been overlooked, beneath the leaves. Clusters of the Lady grape were slightly faded, and the quality not improved. The Brighton appeared as fresh, bright and beautiful as I ever saw it, with bloom undisturbed, the color a dark rich maroon. I have never eaten such rare specimens of this fine grape, and yet the freezing had been severe. They were the nearest approach to a raisin I ever saw on vines. The juices near the skin had condensed, and there was a temptation to chew the skin to secure the fine flavor. It would seem that by the use of such stout paper bags we may keep grapes on the vines several weeks later than otherwise would be possible, and that we may enjoy ripe specimens in this way, from varieties not usually fully matured in this latitude.—*C. A. Green.*

THE Canadian Horticulturist.

VOL. V.]

OCTOBER, 1882.

[No. 10.]

FLOWERING PEAS.

It is surprising that one does not oftener see these beautiful, sweet-scented climbers growing about the dwellings of our flower-loving people. They are much more beautiful than the scarlet runner which is so generally grown, and besides are deliciously sweet-scented, so that they are known as Sweet Peas. Our plate shows their beautifully-varied coloring, but can convey no idea to those unacquainted with the flowers of the delightful perfume they exhale.

They should be sown early in the spring, just as soon as the frost is out and the ground has become settled,

without any reference to the weather. It is desirable that the soil should be in good heart, and the seed be sown four or five inches deep, and about an inch apart. As soon as the plants are up they should be provided with supports upon which to climb, which they will do like any pea by means of their tendrils clasping the support.

In some of the larger cities of America the flowers have been in great demand of late for decorative purposes, especially where it is desired to fill the air with perfume, as well as to please the eye with variety and brilliancy of color.

FRUIT AT THE TORONTO EXHIBITION.

Notwithstanding this unfavourable season the display of fruit this autumn was very fine. The varieties of Apples that were exhibited consisted chiefly of the well-known and long-tried sorts. The Baldwin, Northern Spy, Golden Russet, Roxbury Russet, King of Tompkins, Talman Sweet, &c., were present in full force, being known now the world over as among our most desirable commercial Apples.

In Pears, the old favorites, such as Bartlett, Flemish Beauty, Clapp's Fa-

vorite, Seckel, and Sheldon, were well represented; and in some collections we noticed that new variety that challenges attention by its peculiar form and great size, the Souvenir du Congres.

The display of Plums was unusually good and varied. For some reason the crop of this fruit in the old Niagara District was much more abundant than it has been for several years before; while at Goderich, Guelph, Owen Sound, and in Northumberland and Prince Edward Counties, where Plums are

usually abundant, there is scarcely any.

There was also a goodly number of varieties of Peaches exhibited. This fruit has been receiving much more attention of late than has been heretofore given, and it is taking its place as one of our important commercial products. It is a fruit that deserves more attention from those who are interested in the production of new varieties than Canadians have given it; and if proper care were bestowed upon this labor, the range of profitable Peach-culture could be greatly extended.

The lateness of the advent of warm weather and the coolness of the summer have not been favorable to the display of ripe Grapes grown in the open air. The samples shown were many of them very fine in form and size of bunch, giving promise of luscious fruit if the frosts come not too soon. The Niagara Grape was shown, very handsome in appearance, but not quite ripe. A new white Grape of exquisite flavor was exhibited, fully ripe, called Jessica. This delicious Grape was pronounced by many to be the best out-door Grape that has yet been seen.

MOSS FOR PLANTS.—We have been remarkably successful in restoring sickly plants that have been pining away in pots by shaking them out and planting them in a shallow box, filled with common moss, kept constantly moist. Almost anything seems to grow luxuriantly in this, and our own experience encourages us to advise others to try it. A little soil mixed with the moss could not possibly do any harm. Seeds also germinate freely in it. Coleus and Geraniums root quicker in it with us than in sand. We wonder how we did so long without it.—*Farm and Garden.*

CORRESPONDENCE.

NEW SEEDLING GOOSEBERRIES.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

DEAR SIR,—In compliance with your request I sent you last week specimens of my new seedling gooseberries, which I hope reached you safely. The descriptions, habit of growth, &c., were on the bags containing each variety to enable you to compare them without delay.

The hybrid seedlings were raised some years ago, their origin was from a seed of an English gooseberry, fertilized evidently by the pollen from the wild prickly fruited gooseberry, which grew quite plentifully in a ravine near my garden.

It grew amongst seeds of the English planted to try and raise varieties free from mildew, and its growth was so very strong, reaching six feet high the second year from the seed, that I planted it out amongst my English gooseberries. When it fruited, instead of being prickly, it had strong hairs, almost spines, similar to specimens of No. 8 now sent you, and was evidently a hybrid between the two.

From its seeds sowed again were raised Nos. 1, 2, 7 and 8, specimens of which I send you. All have very strong upright growth, with the exception of No. 9 hybrid, the best of them all, but its blossoms were destroyed by frost, so that I could not send you specimens, there being only one berry left on two bushes. No. 1 hybrid is also different from the others. When its strong young shoots are topped at four to five feet high it sends out slender side shoots from the top which weep down to the ground, covered with fruit, making a very graceful pendulous tree. All the others send out erect side shoots when topped.

I am raising other seedlings from seeds of these, and think they will pro-

bably be better suited to this climate than any other variety as they never mildew.

The crosses between English and Houghton, of which I sent you two specimens, are Nos. 3 and 10. No. 3 is from a seed of the English crossed by the Houghton. It takes rather more after the former in its habit of growth, and in the texture and flavor of the fruit, but it has a strong strain of the native as it never mildews.

No. 10 is a cross between the Houghton and the English, raised from a seed of the former, and will prove, I think, the best market berry yet raised, owing to the solidity of its flesh, large size and good flavor. It never mildews.

I got some preserves (jam) made from it, as also from each of the others. Owing to its meatiness it makes the best I ever tasted, better than either of the others, though all are good.

The bushes are planted close together, about fifteen inches apart, in my garden, near my residence, so as to save them from the birds which destroy all in my nursery grounds, and have not been pruned, as I wanted all the wood for propagating. They are also partially under the shade of fruit trees, whose roots occupy the whole ground, so that their fruit is not so large as they would otherwise be under proper culture, as you will see from the specimens of Houghton grown close beside a bush of No. 10, which bore the largest fruit of any.

Downing and Smith's seedlings grown beside these for comparison did not bear a single fruit this year, their buds being destroyed by a severe frost when in full blossom, while the others being later in blooming escaped.

Yours truly,

JAMES DOUGALL.

Windsor Nurseries, 14th Aug., 1882.

The specimens referred to in the foregoing letter were duly received.

No. 1—Is a cross between the wild prickly gooseberry and the English, two removes from the wild. Bush grows with strong upright shoots five to six feet high. When topped at four feet it makes a handsome pendulous tree with slender branches weeping down to the ground. We found the fruit round, larger than Houghton, but smaller than Downing, color reddish-yellow, skin hairy, quality good.

No. 2—A cross between wild prickly gooseberry and English, and also two removes from the wild. Is also a strong upright grower, with shoots four to five feet high, but the side branches are upright in growth. The berries are red and hairy, much like number one in size and quality.

No. 3—Is a cross between the English and Houghton from seed of the English. The habit of growth is more like that of the native than of the English. The fruit is of a green color, round, about the size of Downing, of excellent quality. Mr. Dougall says that it never mildews. Plant very productive.

No. 7—A cross between the wild prickly gooseberry and the English, being two removes from the wild. The plant is a strong upright grower, with shoots about four feet high, the side branches are upright in growth. It is a great and constant bearer. The fruit is round, hairy, of a reddish color, very much like number one.

No. 8—Also a cross between the wild prickly and English, second remove from the wild. The plant shews more of the traits of the wild than any of the others. It is the strongest grower of them all, the shoots being fully six feet high and the side shoots upright. The berries are red, somewhat prickly,

also bearing close resemblance to number one.

No. 10—This is another cross between the Houghton and English, but from seed of the Houghton. The style of growth is more like the English than like the Houghton. It is a great and constant bearer, and never has mildewed. The berries are pale-green in color, roundish-oval in form, considerably larger than those of the Downing, more meaty than any of the others, of very good flavor, and apparently the most promising of all these seedlings.

We trust that Mr. Dougall will continue his experiments in this direction until he has obtained a race of gooseberries that never mildew, and which rival in size and excel in quality the English varieties. These seedlings are very interesting as illustrative of what may be expected by persistent effort in the raising of new sorts. There is a growing demand for larger gooseberries. Downing, the best we have that has been widely disseminated, is too small to meet the demands of buyers of fruit, and will be dropped as soon as larger fruit can be abundantly supplied.

THE BURNET GRAPE.

Grave fears were entertained by the growers of this magnificent grape respecting its inclination during the season of 1881 to produce a number of small seedless berries in the bunch, thereby marring its very fine appearance. It is the cause of much satisfaction to its growers and admirers that no trace of this blemish is visible this year. It is hoped that a report will be sent to the *Horticulturist* as to how the Burnet is prospering from various localities. In this section it is fruiting heavily and producing some of the finest bunches that have been witnessed on any vine, having set its fruit remarkably well, in spite of the cold weather at the time it

was in bloom. It is, of course, too early at this time of writing—22nd August—to say whether it will ripen thoroughly this backward season, but the promise is exceedingly fine. The vine is very vigorous, without the slightest sign of mildew. It is doubtful if any grape, with the exception of Arnold's Othello, Hartford or Concord, will give as heavy a crop as that shown by the Burnet, and everyone knows that has ripened it, that for flavor and quality of fruit, it is the Queen of outdoor Black Grapes.

P. E. BUCKE.

Ottawa.

MARKETING APPLES.

DEAR SIR,—I see nothing in my June number of the *Horticulturist* (July not received), concerning a matter I have often wished to see, viz., the best mode of handling, and best and surest way of marketing fruit, so as to realize the most for it.

We have great care and concern to get the very best of stock, with the object of supplying home demands, and balance to place on the market. Now, concerning the whole operation of picking, packing, and handling apples so as to realize the most, is a matter I wish to be informed upon.

Formerly, I have, with my neighbors, gathered and piled them in heaps at the foot of the trees, and then waited the time and pleasure of the man who gets his commission on the job, and has no concern whether our fruit lies there until the frost ruins it or not. I think this is a very poor way for us to make the best out of our crop, which should be next to wheat.

Don't you think our Association (for I am only a new member), could afford to employ a competent man to see to the packing, and then have some firm, say in Montreal, to see after the selling.

We have a number of bearing apple trees, about fifteen hundred, consisting of N. Spy, Baldwin, R. I. Greening, G. A. Russet, and Seek-no-Further, and I set out about one hundred Fallo-water a year ago last spring, besides other sorts, nearly all of which are fruiting.

By giving me full particulars concerning mode of operation, you will much oblige

Yours very truly,
D. E. HOPKINS.

REPLY.

BY L. WOOLVERTON.

A correspondent asks for some information concerning the best mode of handling and marketing apples.

1st. *Handling*.—There is probably no better way than the old method of placing apples in piles on the grass, or on bunches of straw, in the orchard. Our own practice has been to bring the apples into the packing house and empty them there in bins, the floor of which is first covered with straw. We find it a good mode, but it is not practicable without plenty of house room, and it is rather more expensive. In a rainy season, however, it is very advantageous, giving an opportunity for packing on days when the workmen cannot go on with the picking. Apples need to be handled with great care, and as few times as possible. Careless pickers must be dismissed, or taught to handle fruit properly. Thumb marks may prove the beginning of decay. The picking basket may be lined with cloth; it should be round, and have a swing handle, and also be provided with a wire hook, by which it may hang from the ladder.

2nd. *Packing*.—In packing, all wormy and defective fruit must be thrown out and sold as second-class. Fair specimens should be used to face the head end of the barrel, and the quality should correspond throughout.

The fruit should be closely packed, and the barrel should be filled to the height of about an inch above the chine, or even more if for a foreign market, and the tail end pressed into place by means of an iron lever press. The barrels must be carefully headlined, and the hoops safely nailed in place, or they may come to grief on the road to market. The name of both shipper and buyer, or consignee, should be plainly stamped on the head end of the barrel with a stencil; also the name of the contents.

3rd. *Marketing*.—I fear I can give no rule for this that will suit every case. In many instances, where lots are small, it is best to ship on consignment to a good reliable house, in such an apple mart as the city of Montreal. Some seasons, also, good success may be obtained by shipping large lots on consignment to some established Commission House in Liverpool or Glasgow. But in most instances it is best to accept a good offer, and sell one's crop for cash, rather than wait for the slower, and not always better, returns from a Commission merchant. But whether one sells outright, or ships his fruit on consignment, it is best to make connection with some well-established Commission House, with whom one can correspond to get quotations of prices current, and through whom one can make sales, without waiting the pleasure of travelling buyers, many of whom speculate out of the seller for the benefit of their own pockets; and some of whom are quite irresponsible.

ONTARIO APPLE.

Mr. J. W. Cumming, writing from St. Hilaire, Province of Quebec, says the Ontario apple tree was winter killed, and I cut it down to two feet of the ground, and five new shoots grew this summer. It seems too tender for this locality.

KIEFFER'S HYBRID PEAR.

Since staying here I have been to visit the orchards in New Jersey and Pennsylvania planted to Kieffer Pear, and can only say, they must be seen to be appreciated. No one can tell the story. The oldest, largest and most experienced pear growers that have been growing pears for Philadelphia market during all their lives, are the men who are going into it strongest, and grafting their orchards all over to it. One man will have 200 bushels of fruit this year. Now understand this is no wild notion, but after testing and selling the fruit several seasons in the market. It is said further to be just what the canning factories want, they claiming there is nothing equal to it.

Such wonderful productions I have never seen in a pear. It is surely a splendid thing, and I am glad that I have worked over 100 trees in my orchard to it.

S. D. WILLARD.

SORGHUM SUGAR.

COST OF ITS MANUFACTURE BY GOVERNMENT.

The Hon. Geo. B. Loring, Commissioner of Agriculture for the United States, reports as follows :

On assuming the duties of my office in 1881, I found 135 acres of sorghum containing 52 varieties which had been planted in Washington for the use of the Department. On being informed that the time had arrived for manufacturing syrup and sugar, I engaged the services of an expert in sugar-making who had been highly recommended for the position of superintendent, and operations were commenced on September 26 at the mill, erected by my predecessor, on the grounds. These operations were continued with slight interruptions until the latter part of October, at which time the supply of cane became exhausted. Forty-two acres of the crop were

overtaken by frost before being sufficiently ripe for use, and this portion of the crop was so badly damaged as to be unfit for manufacture. The yield of cane per acre, on the 93 acres gathered, was two and a half tons; the number of gallons of syrup obtained was 2,977; and the number of pounds of sugar was 165. The expense of raising the cane was \$6,589 45; and the expense of converting the cane into syrup and sugar was \$1,667 59—an aggregate of \$8,557 04.

STRAWBERRIES.

The *Country Gentleman* addressed an inquiry to several fruit-growers, for the best market sort, the best three market sorts, and the best six for general use.

The following opinions are the result :—

S. D. Willard of Geneva, N. Y., says: The best market sort with me is the *New Dominion*; best three, as the matter stands to-day, *New Dominion*, *Cumberland* and *Sharpless*. The best six for home use, *Crescent*, *Bidwell*, *New Dominion*, *Cumberland*, *Sharpless* and *Proflific*. The *New Dominion* is a Canada berry, a fine producer, attractive in appearance, splendid foliage, fruit very uniform in size, ships well, and, above all, *sells well*."

Charles A. Green (editor of *Green's Fruit-Grower*) says: "The best market sort, as it appears to me and others about Rochester, is the *James Vick*, not yet disseminated. Next I think is *Manchester*. Best three for general purposes of those well known: *Sharpless*, *Downing*, *Cumberland*. Best three for quality, *Jersey Queen*, *Black Defiance*, *Lennig's White*. Best six well known, for all purposes: *Sharpless*, *Downing*, *Cumberland*, *Bidwell*, *Duchess*, *Wilson*. *Manchester* is vigorous, productive, medium to large, roundish, light crimson, good to very good, moderately firm.

I have not tested far enough to compare it with the older varieties but consider it very promising."

T. T. Lyon (president of Michigan Horticultural Society) writes: "For all soils and under all kinds of culture, good, bad and indifferent, including ability to bear transportation, I must say *Wilson* still: and omitting transportation, *Crescent*. Under good culture and intelligent management, *Bidwell*, or for near market, *Longfellow*. Best three sorts for market, with thorough culture: Miner's Prolific, Bidwell, Longfellow. Best six, with thorough culture: Miner's Prolific, Bidwell, Longfellow, Champion (or Oliver Goldsmith), Cumberland, Seneca Queen, (or Marion,) where it will bear the sun as it does with me). About an even thing between the Seneca Queen and Sharpless, the former more productive. From a single season's trial, I think *Arnold's Pride*, a new seedling of Charles Arnold of Ontario, likely to exceed all others except in firmness."

Wm. C. Barry (late president of American Nurserymen's Association), says: "I would name Sharpless as the best market berry. During the season it sold here at retail for 15 to 20 cents per quart, while other varieties were selling at 8 to 10 cents. Best three sorts in the order of ripening: Duchess, Cumberland, Sharpless. Best six for all purposes, in the order of ripening: Duchess, Bidwell, Cumberland, Wilson, Sharpless, Golden Defiance. Charles Downing merits a place among the six, and by some persons would be preferred to Cumberland. The best flavored sorts for the table are Duncan, Black Defiance, Seth Boyden, President Lincoln, Sharpless, and the Alpine varieties, Montreuil and Royal Hautbois. Manchester I have not tested yet. Jersey Queen is large and high flavored, and the plant is vigorous."

E. B. Underhill of Poughkeepsie makes the following remarks: "I regard the Crescent as the best strawberry for local market. No well-tried sort displaces the Wilson yet as the best *shipping* berry. While Sharpless, during its season (late only) is unrivalled for profit, as it is certainly the largest berry of value we have, Crescent or Cumberland will pick nearly as late and a week or more earlier, and as single varieties are invaluable and preferable to any I think of. It is very difficult to say which are the *three* best sorts; however, I will venture to say Crescent, Miner, and Sharpless,—not without a misgiving at leaving out Mt Vernon, Champion and Cumberland, and even our old friends, Kentucky and Charles Downing. As a promising variety, Bidwell stands high, but the trouble with my beds of that variety is that promise and performance are not equal. Its foliage is rather slender, except with highest culture; the berry is of medium size and value. At Mr. Roe's it appeared to lead the van. With me I cannot place it above Seth Boyden. For very early, Crystal City will pay here, and Mt. Vernon I picked for market when Kentucky, Miner and Sharpless were gone. In company with Charles Downing I looked over Mr. Roe's beds, and we were then all enthusiastic with Bidwell. Since then my beds have not accomplished half they seemed ready for."

G. H. & J. H. Hale of South Glasbury, Ct., sent the following notes.

Another year's experience with the strawberry, testing one hundred or more sorts, and marketing hundreds of bushels from our own grounds, as well as visiting fruit-growers in fifteen States and the Canadas during fruiting season, have not materially changed our opinion of last year, except in regard to one or two of the newer varieties.

Manchester, for market, is by far the

best of all; the plant vigorous; very prolific; fruit medium to large, the last picking almost as large as the first; no irregular or coxcomb berries; bright scarlet colour; good but not high quality; shipping and keeping qualities only equalled by the Wilson and Finch's Prolific. Its only fault is that of having a pistillate or imperfect blossom, requiring it to be planted with or near some perfect flowering sort.

Crescent Seedling, the most profitable early market berry; its one great fault is that of the fruit running very small at the latter end of the season.

Wilson and Charles Downing, our most profitable sorts six years ago, are now of very little value, as they are more easily affected by the strawberry rust or leaf blight than any of our other varieties.

Miner's Prolific is very valuable either for market or home use; with us, it fully takes the place of the Charles Downing.

Sharpless produces only a moderate crop on one-year beds, while those two years old give an abundant crop of berries of the largest average size of any variety we have ever grown. Its first and largest berries are very irregular in shape, and have the fault of not ripening all over at once—therefore requiring to be picked with unusual care. Owing to its large size, it sells for the highest price in market, and is very profitable on strong, rich soil.

Windsor Chief is a most valuable late market variety, producing enormous crops of rich, dark-colored berries, very acid, yet of good flavor.

Mt. Vernon, very late and prolific; later in quality than the Windsor but not as firm.

Finch's Prolific, vigorous and productive, fruit medium to large, perfect in form, bright color, fair quality, and very firm. This and the Manchester we

think destined to take the place of the Wilson for shipping purposes.

Bidwell, which did so well with us last season, has greatly disappointed us this, not only on our own grounds but everywhere that we have seen it. The trouble is that it "sets" more fruit than the plant can carry out, and the result is almost a total failure—one or two fair pickings, and that is all; and we doubt if it will ever prove profitable for market, unless possibly on very strong, rich soil where irrigation can be practised; we say this with much regret as we have several acres planted for next year's fruiting, and had hoped for great things from the Bidwell.

We might mention many others, but the ones named are the best among more than one hundred sorts; and if we were to plant one variety for market it would be the Manchester, first, last, and every time. If three sorts, Manchester, Windsor and Miner's Prolific; if six sorts, Manchester, Windsor, Miner's, Finch, Crescent and Mt. Vernon.

Best one for family use, Miner's Prolific; best three, Miner's, Manchester and Mt. Vernon; best six, Miner's, Manchester, Mt. Vernon, Crystal City, Sharpless and Cumberland Triumph.

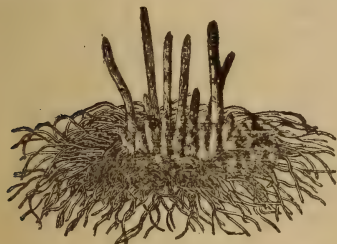
GRAPE LEAVES FOR PICKLES.

I wonder if housewives generally use fresh, green grape leaves to put on top of their pickles to keep them sharp and free from mold. I used to cover them with a flannel cloth, and rinse it out every other day. Two years ago a friend told me that grape leaves were much nicer, so I tried them, and I shall never try cloth again. Grape leaves keep pickles the best of anything I have ever found. I change them once a week, and the vinegar keeps sharp and clear, and it imparts a nice flavor to the pickles. I rinse the leaves in pure water, and let them drain quite

dry, then lay them over every place in the jar. They exclude the air perfectly, and are better, and cause less work than anything else.—*Country Gentleman*.

ASPARAGUS.

The most essential requisite for successful Asparagus culture is sufficient space, and yet not one bed in ten is planted with a view to supply this need. The old system of paving the bottom and crowding the roots into narrow beds, so that they could not extend in either direction, must have been borrowed from the Chinese, with whom the dwarfing and distorting of forest trees and women's feet has reached the highest perfection, and ranks among the fine arts. But, as even the Celestials are commencing to shake off old



ASPARAGUS CROWN.

superstitious notions, we shall, perhaps, also participate in the march of progress, and plant Asparagus according to the natural laws governing the plant.

The best and easiest way to raise Asparagus in the garden is to plant it two feet apart in a *single* row, and let the roots reach out, for their nourishment, as far as they may. If it is not feasible to lengthen the row sufficiently to produce all the Asparagus desired, a second row may be planted not nearer than four feet to the first, and when more space can be given a distance of six feet is preferable.—*American Garden*.

PROLONGING THE SEASON OF PEAS.

How to prolong the bearing season of Peas, as much as possible, has always been a problem, the solution of which is of great importance to every one who cultivates a garden, and the experience of Mr. H. J. Seymour, Madison Co., New-York, in this regard, deserves consideration.

Mr. Seymour writes: "While hoeing, last summer, my Little Gem Peas, growing on rich, mucky land, between strawberry rows four feet apart, I noticed that some of the plants had more than one bearing stalk. The question occurred to me why all could not have several stalks, and, of course, more pods, provided the land was rich enough and there was room enough between them for air and sunshine. Then came the thought of what I had heard and read about shortening-in-plants to make them more stocky and fruitful, and of the practicability of a similar treatment for peas. It was already late in the season, the first blossoms just showing themselves in most cases, yet the experiment was worth trying, and as I had an acre of these peas it could not amount to much if I did injure a few plants. So I counted off just six hundred plants on one row, stuck a stake firmly in the ground and pinched remorselessly an inch or more, blossoms and all, from the top of every one of these plants. Then I counted six hundred plants on the row next to this, and drove a stake, without disturbing the plants.

"I watched the decapitated vines with much interest, and sure enough new branches came out abundantly near the ground and from the axils of the leaves. They finally budded, blossomed, and fruited more abundantly than their neighbors, although about a week later. None of the peas were picked, the entire crop being saved for seed. They were threshed, winnowed, and carefully mea-

sured separately on the 22nd of August, with the following result: The six hundred headed-off plants yielded *five plump quarts*, while the six hundred unpruned ones in the adjoining row, yielded *four scant quarts*."

The practical value of this shortening-in of pea-vines, as appears from this single experiment, consists, therefore, not only in an increased productiveness of twenty-five per cent., but also in the prolonging of the period of picking from a single planting. By pruning a part of the vines, the harvest of these becomes delayed a week, and thus all the advantages may be secured that would otherwise require two plantings.—*The American Garden*.

EGG-PLANTS—HOW TO KEEP THEM.

Those who have a good stock of egg plants on hand, most certainly have an excellent and very convenient article. They can easily be kept till Christmas by storing away in a cool cellar, not too dry, on shelves. Though they may wilt and shrivel away, this does not injure them in the least. They form a most agreeable and excellent dish at dinner.

The usual way of cooking by cutting in slices, sprinkling on salt an hour before frying, and allowing the vegetable juice to drain out, when they are rolled in batter, or dry bread or cracker crumbs and fried, is of course well known. But a much better way is to cut the egg plant in half, longitudinally, like a water melon, scrape out the interior contents as close to the rind as possible, mixing the pulped mass with stale bread or cracker crumbs, a beaten egg, and seasoned with salt and pepper, then returning the whole into the shell and baking, makes a most savory dish that would be very popular if it were better known.—*Prairie Farmer*.

FRUIT ON THE TABLE.

"Quite a large number of farmers have come to feel that they were not doing their family justice without placing upon their table, a bountiful dish of fruits, such as the various seasons of the year afford, beginning with Strawberries, and following with Cherries, Currants, Raspberries, Blackberries, Grapes, Apples, Peaches, Plums, and Pears. Farmers of this class are not so numerous as they should be, nor as they will be in our opinion, ten or twenty years hence."—*American Rural Home*.

"While there has been a marked improvement at the tables of many of our farmers within the last few years there is yet much to learn. One of the greatest faults in this direction, and one of which is the cause of very much illness, is the comparatively small quantity of fruit they use. It is a mistake to consider that fruit, like confectionery, is to be taken only between meals, and not to be connected in the work of sustaining life."—*Farmers' Advocate*.

Such are some of the profound utterances of the late Agricultural Press upon the subject of fruit, as food upon the tables of our farmers. It is unquestionably a subject of great importance and influence in the economy and hygiene of our people. Fruit on the table is not merely a question of fruit for show, not merely to beautify or decorate, or to please our fancy, but more substantially for food, for the sustenance and support of our exhausted physical forces, for medication and health, for pure animal enjoyments, as well as to defend us against the many dangerous and hurtful influences to which "flesh is heir." Fruit in this connection is one of those many merciful provisions of nature, designed for the highest and purest enjoyments of the needy creature man, one of those safeguards that the Creator of all has thrown around frail human life. In

its very nature it is health-giving and pleasurable. It is mainly composed of diluted sugars and acids in delightful admixture held together by fine vegetable tissues, and in this diluted form is found not only pleasurable, but essentially necessary for the well being of the animal economy. It will be well for us to understand here that whenever fruit is mentioned in this connection, matured and well ripened fruit must be understood. Fruit in that beautiful tempting condition, when the internal acids are largely changed to sugars, and the whole mass is of that inviting toothsome color that engages at once the sense of sight, and is in that yielding, state of softness to the touch, that gives assurance to the eater.

The influences of such food upon the human constitution is doubtless very great and definitely marked. This to us is the embrosia and nectar that were formerly thought becoming for the Dieties only to use as food and never for ordinary mortals. The keen observer of human nature can almost readily discern at a glance the difference between the man who is in the habitual use of fruits and vegetables largely in his diet and the man who has a large dose only of animal ingredients in his constitution. In the first case the food being select, congenial and mild, the nature manifests the benign influence of such congeniality. How different is this beautiful influence to that of the mere animal or flesh eater. By this we would not be understood to discard in toto, animal diet, on the contrary we practice and most devotedly believe in a mixed diet as best and most suitable to the urgent necessities of our present economy. What we do mean is simply this, that we most firmly believe that we, as a people use too much animal diet, and if fruit more and more entered into our daily diet, it would, in our humble opinion be better for us intel-

lectually, physically and morally. Further, we believe and would teach the use of fruit at all seasons, and at all times. We believe in fresh fruit, in canned fruit, in evaporated fruit, and in preserved fruit, in jellies, in marmalades, in beverages, in cider and in wine. We believe in its use further, in the autumn and in the spring, in the summer and in the winter and on all days and occasions in company and out of company. In short, we firmly believe in the wisdom of its use thoroughly, wholly and completely. We believe furthermore in all fruits that are by our experience known to be good for food, and pleasant to the eye, and to be desired to make us better. In this connection we believe in strawberries of all sorts although connoisseurs would fain have us believe that some varieties are better than others. But to us they are all good and equally to be taken with equal amounts of rich and well prepared fixings. We believe also in raspberries and blackberries and can take them in equal doses. With our present facilities for preserving and canning these fine summer fruits we believe it is our duty to have them at all seasons of the year, and in greatest abundance. We believe also in currants and gooseberries and in all varieties but not so firmly as we do those of strawberries. Our reasons for this are private, but nevertheless we believe in them. However, we most firmly believe in the free and untrammelled use of the whole of the following list of superb native fruits, viz.: Apples and grapes, and these in all their endless variety of sorts and kinds. In these fine fruits is an almost endless diversity of quality, as hard and soft, as sour and sweet, as woody and melting, as strong flavored and insipid, as buttery and as sugary, but still we believe in them. We believe they all have an appointed place to fill, a work to do and a use to exert and a character to sustain.

We believe also in tropical as well as temperate fruits, and those of all sorts, whether they may be called oranges or lemons from the torrid and tropical regions of California or Florida, or whether dates or figs from the more tropical clime of the East India Islands, or whether they may be limes or bannanas, we could still use them and relish them and be thankful for them. But in our endless and varied wealth of rich and tempting fruits suitable to our condition and clime, we are most happy to say, we need never covet the tropical fruit of the southern zone. Our basket of fruit is so rich, so varied, so tempting, so seasonable, so lucious and delightful. Our earnest and best advice then to the people of this whole country from whatever part of the Globe you may have come, to the high, and to the low, to the rich and to the poor, to the male and to the female, to the young and to the old, whatsoever you may be or whatsoever may be your name, use fruit. Give it constantly and plentifully to yourself, to your wife, to your son and to your daughter. Give it without stint to your manservant and to your maidservant, to your ox and to your horse and to the stranger within your gates. We have thus attempted to show the value of our native staple-fruits as well as all fruits and some of the reasons why they should be more generally placed upon our tables, upon our dining tables and upon our tea tables and upon our festive boards, for our use and comfort. While we are very anxious to produce good fruits for export, fruits well fitted for the English market, we see at the same time very little good fruit placed upon the tables of our peasantry, as though it was perfectly fit and proper for the Englishman to use, but not good for us. We emphatically teach the contrary. Place it upon your tables in a natural state, in a prepared state, for the meal, for dessert for use and our humble word for it, the public

health and the public purse would be the gainer.—B. GOTT.

MARKETING CURRANTS.

The consumption of Currants, both as a table fruit and for preserving increases every year. Thousands of gallons of juice are pressed out annually by the large preserving houses in New York city. This juice is so prepared that it keeps for many months, and large quantities are sold to persons who cannot procure the fruit in season, or do not find it convenient to press it out themselves. In addition to this, tons upon tons are manufactured into jelly, which finds ready sale for fancy-cake bakers and confectioners.

For preserving purposes the old Red Dutch Currant is preferred, and many preservers will buy no other kinds, while other manufacturers are less particular, and buy whatever is cheapest. There is but little demand from grocers and fruit-dealers for this small variety, as for table use only the large "Cherry" and "Versailles" find sale. Dealers in fancy fruits take much pains to procure extra large, selected Currants, and good prices are realized by those marketing a first-class grade.

The best packages for shipping are baskets containing from eight to ten pounds, packed in berry crates. Persons shipping from a considerable distance find it more advantageous to make cheap temporary crates for these baskets than to send berry crates which have to be returned. The ordinary quart berry-basket answers the purpose very well, and, in fact, is preferable to the peach-basket or any other of that size.

For White Currants there is but a very limited demand in the New York market. Black Currants, although not in great demand, sell fairly. These, being more solid than the red and white,

may be shipped in any ordinary box or basket without injury.

In packing Currants for shipping, the baskets should be well filled, that the fruit cannot shake and become damaged during transportation. All Currants are sold by the pound; the net weight of the baskets or boxes they are shipped in should therefore be plainly marked on the outside of every package.—*American Garden.*

NOTES ON HYBRID TEA ROSES.

This family of roses is of recent origin. Nearly all the varieties in this family were raised and introduced by Mr. Henry Bennett, of England, from seed of Tea Roses fertilized with Hybrid Perpetuals. The result is we have a race of roses, giving us the free blooming qualities of the former, with some of the hardiness of the latter class. This new race of roses will probably take an important position in American rose-culture, as they give us early bloom, beginning in early summer, and give a succession until frost. I will give a description of some of the best for general culture.

Beauty of Stapleford.—Flowers large, sometimes very large, color, bright pink; centre rosy carmine; buds very fine; free bloomer and nice grower.

Pierre Guillot.—Flowers very large and double; color, clear red veined with white, and highly fragrant; a good bloomer, and one of the finest roses in cultivation.

La France.—Flowers very large and full; color, a lovely peach; very fragrant; a good bloomer, and the finest rose of its color grown.

Antoine Verdier.—Flowers large and double; color, bright pink; blooms in clusters; a very free bloomer.

Viscountess Falmouth.—Flowers very large, very double; color, delicate pink;

delightfully fragrant; a choice rose in a collection.

Nancy Lee.—Flowers medium; color, bright pink; fragrant; a good, free bloomer.

Michael Saunders.—Flowers large and very double; color, a rich crimson; the plant is a good grower and free bloomer; a very good rose.

Jean Sisley.—Flowers very large and double; color, rosy lilac, edges of petals silvery; opens finely, and is a good bloomer.

Pearl.—Flowers medium size, quite double; color, pale flesh; a finely formed rose and very good bloomer.

Duke of Connaught.—Flowers large, buds very fine; a very free bloomer; color, deep, velvety crimson; growth moderate; requires rich soil to do well.

Madame Alexander Bernaix.—Flowers large and full; color, clear rose; flowers finely formed; a good bloomer, and fragrant.

Madame Julie Weidman.—Flowers large and well formed; color, clear salmon pink; a good bloomer.—ANTOINE WINTZER, in *Farm and Garden.*

CUCUMBER PICKLES.

I never plant cucumbers for pickles before June 15th, as the striped bug seldom troubles them after this date, and I have grown excellent crops planted the first of July. I prefer the Early Cluster for pickles, as this sort does not run to vine so much as the Long Green. It will bear closer planting, and the pickles are easier picked. There are certain strains of this variety which are earlier and more prolific than others, and I have found that sold under the name of Boston Pickling, and Perfection Pickling, far superior to the ordinary Cluster. With these varieties one may plant 5 by 5 feet, which will give over 1,700 hills to the acre. No

matter how rich the land is, I find it pays to manure in the hill; cover the manure about four inches with mellow earth, and drop the seed on the hill and step on it. This presses it down firmly into the soil, and prevents its drying out, while the loose earth, with which I cover, keeps it from baking. The seed will come up sooner and much more uniformly for this pressing into the soil. If the weather is favorable the vines will run in five weeks so that one cannot cultivate with a horse and up to that time the more they are cultivated the better.

As soon as fairly in the rough leaf, thin to four in a hill. With good weather you can begin picking in six weeks from planting, and to get a nice, uniform-sized pickle, they must be gone over every day. The vines should never be moved in picking them, for a vine that is disturbed never does so well afterwards. The best-sized pickles are those from three to four inches in length. If any are missed until they are too large for pickles, they must be taken off the next day, for the vine on which a cucumber is going to seed will not continue to bear pickles. A forty-gallon barrel will hold about 4,000 of the small-sized pickles, after they are salted, and I have kept them three or four years. I do not use brine for salting, but put in a layer of salt, and one of pickles, and let them make their own brine. It will take about a half bushel of salt for a barrel of pickles, and the barrel will need to be filled up two or three times as they settle. A board that will fit into the head of the barrel should be placed on them, and a weight sufficient to keep them under the brine. I would rather sell the pickles as gathered for \$1.50 per 1,000 than to salt them, although I have never sold at less than \$2.50. It is difficult to state with accuracy the yield of an acre of pickles, but under favorable circumstances they will yield a large

profit at the lowest price named. I have often grown my best turnip crops among the pickles, and I have adopted the rule of always sowing turnips at the last hoeing of the pickles. The shade of the vines seems to be favorable, and there is plenty of time after the pickles are done bearing for the turnip crop to mature.—W. F. BROWN. *in the Country Gentleman.*

THE CULTIVATION OF THE SUMAC.

There are thousands of people who wander through the woods in Autumn, picking the beautiful scarlet and yellow leaves of the sumac bush to decorate their rooms, without knowing that there is any other use for the plant. Yet the importation of the sumac into the United States this year, will amount to about 11,000 tons, costing about \$1,000,000. The leaves of the sumac, dried and ground, are largely used in tanning and dyeing, and in Sicily and other parts of Italy the plant is carefully cultivated and treated. In view of the fact that the American sumac contains from six to eight per cent. more tannic acid than the Italian, and remembering that the plant grows in wild profusion throughout the country, it seems reasonable to believe that it might be a very profitable crop. At the present time the amount of native sumac brought into market does not exceed 8,000 tons yearly, and its market price is only \$50 per ton, just half the price of the Italian product. This large difference in the market value of the foreign and domestic article is due to the fact that the American sumac, as at present prepared, is not suitable for making the finer white leather so much used for gloves and fancy shoes, owing to its giving a disagreeable yellow or dirty color.

The many attempts that have been

made to avoid this difficulty by care in collecting and grinding the leaves have not resulted in success, and it has long been supposed that this objectionable quality was inherent in the American plant; but Mr. William McMurtrie, in a report to the United States Commissioner of Agriculture, shows that this difficulty can be surmounted and the American product made even superior to the foreign. Mr. McMurtrie made a number of tests to learn the relative amounts of tannic acid found in the leaves at different periods of their development, and while the amount was found to be greatest in the leaves gathered in July, he found that those gathered in full development in June were even then more than equal to the best foreign leaves in this respect. But, further, he found that the deleterious coloring matter (due to the presence of quercitrin) was not yet developed, and that therefore the American leaves gathered in June were superior to the Italian for all purposes.

The importance of this discovery may be seen by the fact that the cultivation of the plant may be carried on most profitably in this country as soon as manufacturers and dealers recognize the improvement thus obtained in the domestic article, and by classifying it according to its percentage of tannic acid, and its relative freedom from coloring matter, advance the price of that which is early picked and carefully treated. In Italy the sumac is planted in shoots in the Spring, in rows, and is cultivated in the same way and about to the same extent as corn. It gives a crop the second year after setting out and regularly thereafter. The sumac gathered in this country is taken mostly from wild plants growing on waste land, but there is no reason why it should not be utilized and cultivated on land not valuable for other purposes.—*Scientific American*.

THE SOUHEGAN RASPBERRY.

This very valuable, early, and prolific blackcap is a chance seedling, originating in the garden of a Mr. Carleton, of Hillsboro' county, New Hampshire, about 1870, and for the past five or six years he has had two or three acres of it growing for market. I visited the original plantation several years ago, and was so very favorably impressed with its great value as an early market berry, that I at once made arrangements with the originator for his stock of plants. For three years now we have had it in fruiting at Elm Fruit Farm, and have received far better returns from it than from any other Raspberry we have ever grown.

It surpasses all other sorts in three very important points, viz: hardiness, earliness, and great productiveness.

The canes are very vigorous, branching quite freely, with many strong, sharp spines. In hardiness and vigor of plant it has no equal among blackcaps, and I doubt if even the hardy Turner, which is called the "iron-clad" among red sorts, is any more hardy. From last year's experience I am led to think that Souhegan is the more hardy of the two, as Turner was badly damaged in one of our fields, while Souhegan was uninjured; and among the hills of New Hampshire, and along the banks of the Souhegan River, near where it originated, it has always passed through the winters sound to the tip. In my travels the past month, in fifteen States and the Canadas, wherever I found the Souhegan growing, almost the first thing said of it was, "It is the most hardy plant we have."

The originator claims that it is four times as productive as any other blackcap, and while I cannot fully agree with him, must admit that it is far more prolific than anything I know. Quarts upon quarts of delicious berries,

jet black in color and approaching the Gregg in size, are piled upon the bushes. It is about one week earlier than the Doolittle (which in years past has been the early market black-cap), and herein lies its chief value, ripening as it does along with the late varieties of Strawberries, when fruit is scarce, it just fills in the gap before the red Raspberries, and sells for double the price of Mammoth Cluster or Gregg, which are ten days or two weeks later.—J. H. HALE, in *Farm and Garden*.

ZINC LABELS.

Sheet zinc, from its indestructibility, and the ease with which it may be cut and managed, is a favorite material for tree and shrub labels. If cut in the form of a very long tapering wedge, the smaller portion may be coiled around a twig, or small branch, and thus avoid the use of a wire, and where the small end of the label is coiled around a small branch, it will yield to the increase of that in size, and not cause strangulation. The old method with zinc labels was to write upon them with an ink made of some salt of copper, and several have asked for the formula for preparing it. The original ink was made of Verdigris and Sal-ammoniac, of each 2 drams, Lamp-black 1 dram, Water 4 oz. As these need to be well rubbed together, it will be as well to let the apothecary mix them in a mortar. This is to be used with a quill pen upon the surface of zinc that has been made clean and bright by the use of emery paper. We have been informed by our correspondent "Horticola" that a strong solution of Sulphate of Copper—"Blue Vitriol," or "Blue-stone," will answer the same purpose, adding a little gum water to the solution, if need be, to prevent the ink from spreading. The use of the lamp-black in the ink first mentioned, is only to make the ink visible while writing with it. In both

these cases, the copper is, by chemical action, deposited upon the zinc, and, becoming oxidized, makes a permanent and conspicuous writing. Another and much simpler method is simply to write upon a clean zinc surface with a common lead pencil. By the action of the air the zinc becomes tarnished and grayish, while the black lead prevents any such change where the writing is, and though not so conspicuous as that written with the ink, is quite as permanent, and being much less trouble is preferable.—*American Agriculturist*.

PRUNING ROSES.

Roses are better for a little pruning, if it has been previously neglected. This must of course be done with a definite object in view. First, a well shaped bush on top, and also to promote growth to a desired end, as for instance, whether the plant is to be a standard trained on a pillar, or a trellis, a wall, etc. Again some varieties require more pruning than others, but in all pruning the cut should be made so that the terminal bud will be left in position for the most favorable growth, whether right, left or upwards. If a great quantity of bloom is wanted irrespective of size, prune only so as to have the plant in good shape and well furnished. If large bloom is required, after taking out all weak wood, cut the balance back to not more than three or four buds each. Some roses as a rule require less cutting in the West than in the East, and for the farm yard all that will be necessary will be to thin each season as may be indicated by the previous summer's growth. So-called Hybrid perpetuals (Remontants) that bloom in the spring and again in the late summer, may be cut back after the first bloom is over, when they will generally make growth for the autumn bloom.

The Remontants require little pruning in summer. They, however, must have

plenty of manure and water, especially in the drouth of summer, if autumn blooming is expected.

The ever blooming class comprises four principal sub-classes, Noisette, Tea, Bengal and Bourbon. The Noisette are strong in growth, usually bearing their bloom in clusters. The Bourbons come nearer to the Remontants and the Teas and Bengals are of more delicate growth and generally liked in the North for pot growth. None of this class require excessive pruning, only occasionally cutting back in out-door culture. For pot cultivation plants started the previous season are preferred.—*Prairie Farmer*.

MANCHESTER STRAWBERRY.

The Manchester, regarding which we have hitherto restrained any positive expression of opinion, is one of the most desirable strawberries we have ever raised, and we have tested not less than 250 different kinds. The only thing that can be said against it is that it is a pistillate, and must be grown near perfect-flowering sorts, which for many farmers is attended with trouble or perhaps inconvenience. Our plants are exceedingly vigorous and productive. We have just examined them and find that each plant, on an average bears 16 peduncles or flowering stems, and each flowering stem bears, on an average, 10 berries—giving 160 berries to a plant. We beg to emphasize that we are speaking of *average* plants. On one plant we counted 22 peduncles and 220 berries in the various stages from ripe to just set. This berry is firm, very uniform as to shape, which is roundish conical;—it ripens in every part and averages above medium as long as it remains in fruit. The quality when ripe is good, though, like the Wilson, it is sour when it first colors—a characteristic, it seems, of all excellent market berries. It

ripens with the Sharpless and after the Bidwell. On the grounds of the plain, hard-working farmer, Mr. Jesse Beatty, with whom it originated, it thrives in a light, dry, sandy soil. With us it thrives in a moist soil inclining to clay. Several years ago, from our own tests, we spoke highly of the Sharpless, and soon after its introduction, of the Cumberland Triumph. We have never had occasion to regret this, and we have now little fear that we shall regret commending the Manchester to our readers as the best market berry at present known. It is now in the hands of all nurserymen and will be offered at reasonable prices next Spring, if not this Fall.—*Rural New Yorker*.

AN EXPERIMENT WITH PEAR BLIGHT.

Arba Campbell, of Oswego, N. Y., reports to the Elmira Farmers' Club the following experiment which we take from the *Husbandman*:

"I have a beautiful Bartlett pear tree standing in the front yard by my residence that is a good bearer, beautiful in form, and affords a fine shade to my sitting-room window. It is growing in what we consider a rich, deep, alluvial soil, on the river bottom, within a few rods of the river. In the heat of the summer nearly four years ago when the weather was very dry I discovered that this tree was struck with what we call 'pear blight,' and as I had lost two fine trees at the side of the house the year before from the blight, I thought all that could be done was to put up with the loss. A week or two later as I stood in the street looking at the tree I saw that the top boughs were dead down at least four feet, and every limb on the tree seemed more or less affected, then the words of Scripture came to my mind: 'Dig about it and dung it one more year before you cut it down.' I went

into the house and examined Emil Wolff's tables of analysis to see what the mineral supply to the pear was composed of, for I thought the land rich with barn manure, and found it to be 54 per cent. of potash, 9 of soda, 5 of magnesia, 8 of lime, 15 of phosphoric acid, and 6 of sulphuric acid.

"I called my man and dug away the soil for six or eight feet around the tree and down until the top roots were all uncovered, and then took 100 pounds of German salts (containing 15 pounds of pure potash) mixed it with four or five times its weight of earth and spread it over the roots. I next took seventy-five pounds superphosphate and mixed it with earth and spread it on top of the mixture with potash salts. Then I took fifty pounds of lime mixed with earth and spread on top of the potash and phosphate (these contain all the above minerals.) We then drew from the well twenty or thirty pails of water and gave the whole a thorough wetting, and in one week's time I could see that the tree was reviving and the blight apparently never extended an inch beyond what it was at the time of making the experiment. The tree bore a small crop of good pears in the centre of the top that summer, but at the extremities of the limbs they fell off. The next year it bore a large and fine crop of pears. None fell off and no insects seemed to touch them. The third year was the same, the crop large, fine, and smooth; and this, the fourth year, the crop promises to be as good as the two previous years. Now this proves to my mind (so far as one experiment can prove anything,) that what we call 'pear blight' is simply starvation; that the mineral supplies in the soil had become exhausted and the tree was dying for want of food. I fed it, and it got well, and returned me many times four-fold. And it proves a little more, for what had been a semi-annual bearer became an annual bearer, and I doubt

much if most trees, if properly fed, would not produce yearly crops of good fruit."

PLANTS BY MAIL.

The following directions are for the guidance of those who receive plants by mail: Unfold the packages carefully, and put the moss-bound roots into a pan of water quite warm to the hand, and let the roots drink to their fill of it. It will not hurt them to soak an hour in the water, or until it becomes quite cold, and if the leaves still look a little crisp turn off the cold water and add warm water. Then take off the moss carefully and dip the roots into fine sand; if you only have white sea sand for scouring purposes, wash it through two or three waters, in a colander or sieve, and dry it in the oven partly, then roll the roots in it until they are coated with it. Plant in good, rich compost, of one-third decomposed manure, and two-thirds garden soil, good and rich, and well mixed together. Take small pots for small plants. Three-inch pots are large enough for all plants sent by mail. Put a small bit of charcoal or broken pottery at the bottom, and fill one-third with soil. Press in the roots and fill up tightly with the soil. Close planting—*i. e.*, settling the earth closely around the roots—is needful for success in planting in pots, as well as in the open border. Set the plants in the shade for two or three days, or into a well-prepared hot-bed, and cover them with newspapers. Water freely with a watering-pot—but if kept in the house do not give enough to sodden and decay them—and in a week they will have taken root in their new home and begun to grow, and when they have entirely recovered from a long journey they can be transplanted into the border. If they have only come a short distance, however, after a bath and a roll in the sand they can be planted directly into the border,

and should then be well watered and shaded from the hot sun for several days.
—*American Cultivator*.

THE RADISH AND CABBAGE FLY.

Every gardener has been sufficiently annoyed by the larvæ of these flies, in the form of little white maggots, eating his radishes or burrowing in the stalks of his young cabbage plants, to hail with delight any remedy that will rid him of these pests. Prof. A. J. Cook, Michigan Agricultural College, writes to the *American Agriculturist* as follows :

"For the past two years I have been experimenting with Bisulphide of Carbon to destroy subterranean insects. This substance has proved effectual, but in case of the insects in question, especially the Radish Fly, its expense is an objection to its use. The past season I have tried a new remedy with gratifying success. This consists of a preparation of Carbolic Acid. The material which I used was prepared as follows : Two quarts of common soft soap were added to one gallon of water, and all heated until it commenced to boil, when it was removed from the stove, and while yet hot one pint of crude Carbolic Acid was added, and all thoroughly mixed. This was then set away in a close vessel, and was ready for use as occasion might require. To repel the insects in question, one part of this mixture was added to from 50 to 100 parts of water, and the new mixture was sprinkled on the plants as soon as they were up, and after that once every week. This same preparation will serve to repel the Cabbage Fly (*Anthomyia brassicæ*). But for the latter, my experiments go to show that Bisulphide of Carbon is cheap, efficient, and does not simply drive the fly away, but destroys the maggot. As "he that fights and runs away, may

live to fight another day," the Bisulphide of Carbon remedy is, I think, to be preferred to the Carbolic Acid mixture for use against the cabbage maggot. We sprinkled the Carbolic Acid preparation directly upon the radish plants, without injury to the latter ; but if it is found to injure the plants from too great strength, it will serve as well to turn it in a trench made close along beside the rows of plants. The peculiar odor of the acid which repels the flies as they come to deposit their eggs so far escapes that it is necessary to apply the liquid as often as once a week to insure perfect success. Caution is required also that the preparation be not so strong as to injure the plants when placed immediately upon them. From one season's trial I can strongly recommend the above application."

WHITE GRAPES FOR THE MILLION.

Josiah Slater, well and favorably known to pomologists, has a spicy article in the *Gardener's Monthly* on the new white grapes, from which we glean the following points regarding the Pocklington, which is attracting general attention :

I have been familiar with the Pocklington for five years. The first two years of my acquaintance with it the original vine was so over-cropped as to retard its ripening and spoil its quality. It has, however, improved in quality every season since. This last year, 1880, the Pocklington was fit for market in Monroe Co., N.Y., about September 6th, but it is much better, with little or no pulp and with a honeyed sweetness by 15th or 20th of September, and fully ten days earlier than the Concord on the same grounds. It hangs well on the vines till destroyed by frost. The Pocklington is a seedling of the Concord, just as strong and vigorous a grower, fully as

hardy to withstand the winter's cold and summer's fluctuations in temperature, to resist mild-dew as its parent, the Concord. Last fall I kept a bunch each of Lady Washington, Niagara, and Pocklington till near the middle of December, on a plate in a close room. To my surprise, the Lady Washington, although the thinnest skin, was apparently the best keeper. I have no doubt, with a little care, either of these grapes may be kept to January 15th in good condition. To my taste the Lady Washington is the best as to quality. The Pocklington is the next best, and while we are in doubt as to whether we can grow the Lady Washington successfully, it being a hybrid, I think there is no doubt whatever that the Pocklington will thrive and do well over a wider extent of country than any other good grape, not excepting the Concord; for where the Concord will do well, I believe the Pocklington will do better because of its earliness.

While I cannot agree with my friends who think the Pocklington grape better in quality than the best hothouse grapes, I do think it will prove the best and most valuable purely American Grape we may have for years. And on purely American and of the *Labrusca* species, I think we shall have to rely for our crops of market and wine grapes in most localities of this latitude east of the Rocky Mountains.

I consider the Pocklington grape, the white "grape for the million." We have had scores of white grapes introduced, tested, proved wanting, and discarded within the last thirty years but the Pocklington has come to stay. It is of the largest size both in bunch and berry and the most successful white grape in taking premiums at fairs. It is seen above all others, it attracts more attention, and recommends itself—the grape men cannot let it alone.

THE CHERRY TREE APHIS.

This insect, a plant louse, infests the under side of the leaves and the tender twigs of the cherry and plum. And I have this season found it attacking the green fruit of the plum. It appears with the earliest leaves in the spring, in countless numbers, causing them to curl or wrinkle into fantastic shapes, lose their color and fall prematurely.

It appears in both the winged and wingless forms, the earlier broods containing fewer of the winged forms than the later. The winged females measuring about one-tenth of an inch to the tips of the closed wings; color black or brownish-black; abdomen broader than the thorax, having an ovoid or egg shape which is more marked in the wingless female.

The wingless female measured about five-hundredths to six-hundredths of an inch in length; antennæ whitish with the two basal joints and the apical half black; legs whitish except the feet, tips of tibiae and femurs which are black. The abdomen has a prominent raised ridge along the lateral margins. General color black or brownish-black.

There are several broods in one season (from five to eight) and they are so prolific that were it not for their natural enemies they would soon over-run and kill the whole tree.

One of its most persistent enemies is the larva of a two-winged fly of the genus *Syrphus*. The larva is of a pale greenish color, translucent, spindle shaped, attenuated anteriorly, and about one-half an inch in length. And it is a refreshing sight to the fruit grower to see with what avidity this sluggish looking worm sucks the juice from these tiny pests and casts their empty skins aside.

The larva of a small beetle (*Coccinella*) and of a neuropterous fly (*Chrysopa*)

have also been found feeding on this aphid.

Some of the more common remedies for this pest are strong soap-suds or a mixture of kerosene and water with which the trees should be given a thorough drenching. The latter mixture, however, if too strong may slightly injure the foliage, but will do no permanent damage. Suffocation with tobacco smoke has also been highly recommended.—*Prairie Farmer*.

SMILAX.

Smilax makes a beautiful plant for the window, if a strong young plant is secured in the fall, placed in an eight to ten inch pot, set in such a position that a string on which to train it can be run up one side of the window and across the top. As soon as the young shoot is long enough, twine it around the string to give it a start, as it were, after which it will rapidly grow and reach the top, when it will have to be directed in its course across the top of the window. Be sure to get a young plant, as they do much better than old ones, and when growing vigorously, give plenty of water; keep the leaves free from dust, and it will soon form one of the most beautiful window ornaments which can be imagined. After it has reached as far as wanted, pinch off the end of the shoot, which will induce fresh shoots to start from the different joints, and at the same time induce it into flower sooner than when allowed to grow at random. During the time it is in flower the room is filled with the sweetest odor, after which comes the beautiful fruit, hanging in clusters and remaining for weeks in perfection.

Many fail with smilax in windows, but if they would attend to getting a one-year old plant, then, good, porous soil, and a string—not a wire, to run on,

there is not much danger but it will grow if attended with water sufficient to keep the soil moist all the time, but not in such quantities to produce saturation of the soil.—*The Prairie Farmer*.

THE CAROLINE RASPBERRY.

In regard to the Caroline Raspberry, I have tried it so thoroughly that I do not hesitate to recommend it as one of the best of raspberries. When the berry begins to color it is a pale yellow which turns to a pretty salmon color when ripe. Among berries of its colour it is equalled by none except the Brinckle, and it is but little inferior to that old standard when ripe. It is thoroughly hardy, a very strong grower, and immensely productive. Its ability to bear long carriage has yet to be proved, but for a near market its value is already established. The amateur, at least, should accept the Caroline as a boon—"Horticola" in *Rural New Yorker*.

[We have not found it to be high flavored.—Ed.]

A NATIVE AMERICAN PLUM.

Golden Beauty.—Here we have a most remarkable and valuable acquisition. It is one of Onderdonk's seedlings, and seems to be, from leaf and bloom, a hybrid, between some large late Chickasaw of Wild Goose type and some fine variety of *Prunus Americana*, as the leaf, bloom, method, and time of fruiting remind one of the Weaver Plum, but Chickasaw blood is visible just as well. Young twigs are yellow when mature, green before; the leaves are very large, of a rich, light green, with the glossy surface of the Wild Goose, and hang on very late. The growth is as free and smooth as the Peach, with twigs as large; the fruitage is astonishingly great; Plums are deep golden yellow, of size of best Wild Goose, but orange-shaped, very

solid, rich, small seed, nearly free; ripens with Heath Cling Peach, blooms with the Weaver Plum, about a week later than Wild Goose. Free from all diseases and insect depredations as any known variety.—*Farm and Garden.*

THE TUBEROSE.

Because many farmers' wives cherish the belief that some wonderful skill attends the cultivation of this plant, they deny themselves the pleasure of its possession. The bulbs must be lifted before there is any danger from frost and spread in a warm sunny place to thoroughly dry. If they become chilled in any way, either before being lifted or during the winter, their value is destroyed. But if kept in a warm closet they will repay for all the trouble by their spikes of beautifully pure and fragrant blossoms.

Tuberosees are reproduced very rapidly. Therefore after a start has once been made with a collection of bulbs of one, two and three years' growth, the owner can continue to set the same and there will be no trouble in having all that are desired.

There is no difficulty about the planting and cultivation. They will do well on any soil that will produce a good crop of corn. The soil should be made mellow, so as to be easily worked, and the bulbs set at such distance apart as the extent of surface will allow, and covered with the soil. All the cultivation that is necessary is to keep the soil mellow and free from weeds.

If desired for early blooming the bulbs may be set in boxes the latter part of the winter and kept watered and in a warm room. They will then come to flowering earlier than if not set in the ground until all danger from frost is past.—*Farm and Garden.*

PIONEER BEET-SUGAR COMPANY.

Through most worthy efforts of the directors, etc., of the beet-sugar company at Coaticook, P. Q., Canada, the Canadian Government has granted to it a subsidy of \$35,000. This amount added to the money elsewhere obtained will permit, it is thought, the manufacture of beet-sugar under more favoring circumstances than last year. The planting season has been considerably retarded, owing to late frosts, etc. In the early part of June there remained yet considerable sowing to be done. The greater number of contracts for beets have been made on the Island of Montreal. The seeds appeared above ground with a satisfactory regularity; and the weather is said to have been favorable, as regards amount of rain, heat, etc.

The seeds sown were of the Imperial and Electoral varieties. The fertilizer used was mainly superphosphate manufactured from the bone waste, and residues from defecation; this, it is considered, makes a most excellent plant food.

About 10 tons of seed were used to the acre, distributed with an ordinary seed-drill.—*The Sugar Beet.*

APPLE JELLY.—Pare, core and quarter two dozen large, tart, juicy apples. (If the apples are red and you desire the jelly to be colored, leave the skins on, only being careful to remove imperfect spots.) Boil them until thoroughly soft, in enough water to cover them, being careful not to mix to a pulp by stirring. Strain the juice by letting it drip slowly through a flannel jelly-bag made into a cone. Do not press it, or the juice will not be clear. To each pint of juice allow three-fourths of a pound of sugar. Boil the juice until "clear," add the sugar and boil fifteen or twenty minutes longer. To one pint of the jelly add the juice of one lemon—not the grated rind, unless you wish your jelly to have the lemon instead of the apple flavor.

HONEY PUDDING.—Ingredients: Honey, one-half pound; butter, six ounces; bread crumbs, one-fourth ounce; eggs, eight. Beat the honey and butter to a cream, and add the bread crumbs; beat all together for ten minutes with the yolks of the eggs. Put into mould and boil for an hour and a half. Serve with any nice pudding sauce.

STRAWBERRIES.—The Crescent strawberry proves to be the earliest here, marvelously productive, and meets with ready sale at good prices when sold at home markets. It is not firm enough for shipment. It will thrive on ordinary soil with ordinary culture. It is more profitable for near market than Wilson. Sharpless is the largest strawberry of all; vigorous, and of good quality when at its best. When over-ripe it loses character. It ripens slowly and unevenly; these are its defects. It is not firm enough for shipment. While it does not yield as many quarts as Wilson or Crescent, it will be profitable to have a portion of the market plantation of this variety, as it brings a fancy price anywhere. It is well to have some firm berries like Wilson or Manchester, as when a hurry comes these can be neglected a few days without loss, while the soft berries must be gathered and sold without delay.—CHARLES A. GREEN, in *Country Gentleman*.

ARSENIC FOR CANKER WORMS.—We gave an account a few years since of the successful use of Paris green by the late Mr. Chapin, in his great apple orchard in East Bloomfield, N. Y., for the destruction of the canker worm. A wagon tank, such as threshers employ, was filled with the usual mixture of Paris green and water, and from it the infested trees were showered by means of a forcing pump. We observe by some late journals that the same method is employed by A. R. Whitney, of Illinois, who has an orchard as large as Mr. Chapin's. A visitor stated that he found the foliage of the trees clean, entire and healthy, while the apple orchards around were desolated with the canker worm. Mr. Chapin destroyed the codlin moth by the grazing of sheep, and we had occasion to observe the contrast between the smooth fruit of this orchard and the badly infested apples of a neigh-

bor who took no care.—*Country Gentleman*.

GLUCOSE HONEY.—The *Boston Journal of Chemistry* makes these queer revelations about glucose honey and other confections:—"Millions of pounds of glucose are made every month. It is used mostly as an adulterant in the manufacture of table syrups, and in adulterating the dark, moist sugars used largely by the poor. Its next largest use is in the manufacture of candies. All soft candies, waxes, taffies, caramels, chocolates, etc., are made of glucose. Children are, therefore, large consumers of this substance; the honey bees also are fond of it, and will carry it away by the ton if it is placed within their reach. The honey made from it is no better than the pure glucose, as it is stowed away in the cells without change. Human ingenuity, it is stated, has reached the point of making honey and storing it in the comb without the intervention of the bee. By appropriate machinery a nice-looking comb is made out of paraffine, and after the cells are filled with glucose syrup, this fictitious 'honey' is warranted true white clover honey from Vermont.

BACTERIA AND THE YELLOWS.—Prof. Burrill says that very recent examinations of specimens of diseased peach trees sent him from Michigan, where this malady has prevailed, confirm his opinion that the disease known as the yellows is caused by bacteria. He finds the same disappearance of stored starch in the peach shoots as occurs in blighted apple and pear trees, and at the same time numerous bacteria. These minute organisms in the pear are rounded oblong, and commonly double-jointed; but sometimes they are single, and occasionally several joints are found. Those found in the diseased peach are long and slender, and consist of several joints. Both may, however, be mere modifications of the same organisms. The pear bacteria are about one-thirty-thousandth of an inch cross diameter, and one-half more in length. Those in the peach are about twice as long. To examine their shape, a microscope magnifying the diameter one thousand times is requisite, and so small are they that a thousand millions would be required to form a solid mass as large as a pin's head.

SAVING MOTHER.

The farmer sat in his easy chair,
Between the fire and the lamp-light's glare ;
His face was ruddy and full and fair,
His three small boys in the chimney nook
Conned the lines of a picture book ;
His wife the pride of his home and heart,
Baked the biscuits and made the tart ;
Laid the table and steeped the tea,
Deftly, swiftly, silently.
Tired and weary, and worn and faint,
She bore her trials without complaint,
Like many another household saint—
Content, all selfish bliss above
In the patient ministry of love.
At last, between the clouds of smoke
That wreathed his lips the husband spoke.
" There's taxes to raise, an' interest to pay,
And ef there should come a rainy day,
'Twould be mighty handy, I'm bound to say
'Thave sumthin' put by, For folks must die,
An' there's funeral bills, an' gravestuns to buy—
Enough to swamp a man, purty nigh ;
Besides, there's Edward and Dick and Joe
To be provided for when we go.
So 'f I was you, I'll tell you what I'd do,
I'd be saving of wood as ever I could—
Extra fire don't do any good—
I'd be savin' of soap, an' savin' of ile,
And run up some candles once in a while ;
I'd be rather sparin' of coffee an' tea,
For sugar is high,
And all to buy,
And cider is good enough for me.
I'd be kind o' careful about my clo'es,
And look out sharp how the money goes—
Gegaws is careless ; natur' knows ;
Extra trimmin' 'S the bane of women.
" I'd sell the best of the cheese and honey,
And eggs is as good, nigh about's the money ;
And as to the carpet you wanted new—
I guess we can make the old one do ;
And as for the washer and sewing machine
Them smooth-tongued agents so pesky mean,
You'd better get rid of 'em slick and clean.
What do they know about woman's work ?
Do they calkilate women were made to shirk ?"
Dick and Edward and little Joe
Sat in a corner in a row.
They saw the patient mother go
On ceaseless errands to and fro ;
They saw that her form was bent and thin,
Her temples gray, her cheeks sunk in,
They saw the quiver of her lip and chin—
And then with a warmth he could not smother,
Outspoke the youngest, frailest brother :
" You talk of savin' wood and ile,
An' tea and sugar all the while,
But you never talk of savin' mother ?"

DELICATE APPLE SAUCE—Pare, halve and quarter a sufficient quantity of nice stewing apples ; put them into a baking dish, and cover thickly with sugar—bits of lemon peel may be added if liked. Put a plate over the dish, and set it into a pan having a little hot water in the bottom, and place in a hot oven. Bake until the pieces are clear and tender.

COAL ASHES.—Common coal ashes, if well distributed about the roots of currant bushes, is one of their best promoters. This should be done by loosening the soil about their roots, and placing the ashes near them ; cover firmly with earth above, and the bushes will bear such clusters as will speak the beneficial effects of this application of material too commonly thrown aside as of no use. Cherry trees also gratefully accept this renovator, and if carefully bedded about the roots with coal ashes in the fall, the yield of fruit the following year will surprise the cultivator. Especially is this effect produced in the black loam of Illinois. We have in our mind one fruit garden there where all the small fruit was treated in this way, and have never seen their yield excelled. — *National Farmer*.

THE FRUIT GARDEN.—There should be a Fruit Garden on every farm for the profit, health, and enjoyment that it brings, where well cared for—yielding a succession of fruits from early strawberry time until the latest grapes are gone. It is our desire that all who have no garden for small fruits may resolve to prepare the ground and plant one the coming spring. The soil for a Fruit Garden should be rich, deep, and mellow, and above all thoroughly drained should it be naturally wet. There is nothing better than well rotted stable manure for enriching a garden soil. The list of Strawberries that may be planted is a long one and has been added to from year to year. Charles Downing, Seth Boyden, Monarch of the West, and Sharpless are all reliable. The Bidwell has proved excellent, and the Manchester is a promising new sort. On heavy soils the Jucunda and Triomphe de Gand do well. Among Raspberries are the Cuthbert, Patrician, and Herstine. The Mammoth Cluster and Gregg are among the best Black-caps for general use. For Blackberries the Kittatinny and Snyder are the best. The Versailles, Red Dutch, and White Grape lead in the Currants. It is difficult to select from the long list of excellent grapes, Concord, Wilder, Brighton, Eumelan, Delaware, and Pocklington give a good variety. — *American Agriculturist*.

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ASTERS.

These are late summer blooming annuals, without which the flower garden in September seems bare of bloom. The coloured illustration in this number will give our readers a good representation of the general form and colouring. There is a great variety of these beautiful flowers, differing in size of plant and form of flower, but each having a beauty peculiar to itself. Some of them grow quite tall, upwards of two feet in height; others are very dwarf, scarcely attaining to more than six inches. The variety known as new rose is a great favourite, and may be had in fifteen separate colours. The new Crown or Cocardeau Asters have all a white centre surrounded with a broad border of carmine, or blue, or scarlet, or violet, &c., and are very attractive. One of this class will be found in the coloured

plate. The New Victoria variety has a fine pyramidal habit with large flowers. The largest flowered is the Washington Aster, sometimes attaining to five inches in diameter. The dwarf Chysanthemum-flowered grows to about one foot in height, and flowers later than most of the others.

Asters require a rich soil, worked to a good depth, in order to their full development. The seed may be sown in a cold frame or in a seed bed in the garden. After the plants have become strong they should be transplanted in damp or cloudy weather into beds prepared for them. The plants may be set about a foot apart each way in the beds, except the dwarf growing sorts, which may be planted about four inches apart. The dwarf varieties make a very pretty border planted in single rows along the edge of the garden walk.

THE CANADIAN HORTICULTURIST FOR 1883.

The next number will close the current volume, and the term of subscription of most of our readers will expire at the same time; of all, indeed, save a few names which have already sent their dollar for 1883. Many encouraging letters have been received during the

year expressive of kindly appreciation of the efforts made to improve this monthly, and many have given practical expression to their appreciation by shewing the magazine to their friends and inducing them to subscribe. To all who have in any way encouraged

the efforts of the Directors to maintain a monthly periodical devoted to the dissemination in Canada of information concerning horticultural matters, most sincere and hearty thanks are hereby given. It is believed by them that such a monthly periodical is essential to the horticultural progress and prosperity of the country, and that any effort made to extend its circulation deserves the thanks of everyone who desires to see this country take the position it is capable of maintaining in all fruit-growing and horticultural matters.

It is the intention of the Directors to continue the *Canadian Horticulturist* during the year 1883, and to make it as attractive and interesting as it has been during the past year, and as much more so as the means at their disposal will permit. If the circulation could be increased to four thousand, the additional means derived therefrom would be expended in still further enlarging and embellishing the magazine. Will not our readers make an effort to accomplish this desirable object by sending one new subscriber with their own renewal before the close of this year, so that the Directors may feel enabled to begin the year with an additional number of pages of reading matter, and make arrangements for increased illustration. If each subscriber would procure but one new name the circulation would then be about four thousand, and such improvements could then be made as the Directors have not yet been able to secure for want of means.

Every subscriber becomes entitled to receive not only the *Canadian Hor-*

ticulturist every month, but also a copy of the Annual Report of the Fruit Growers' Association for 1882, and bound with it, the Annual Report of the Entomological Society for the same year. In addition to these, each subscriber will have sent to him by mail, post-paid, whichever of the following articles he may prefer, namely :

A Rose Bush, or

A Peonia, or

A Vine of the Worden Grape, or

A Plant of the Niagara Raspberry.

In order that a sufficient number of these reports and plants may be secured to meet the requirements of subscribers, it is essential that subscriptions should be sent in before the first of January next. The Directors cannot promise that those whose subscriptions are received after that day will be supplied as they might wish. The edition of the Reports was exhausted this year, so that those who sent in their names at a late day may have failed to receive a bound copy. And the same was true of some of the plants distributed last spring. That all disappointment from these causes may be avoided, the Directors wish it to be clearly understood that subscribers whose names are received after the first of January next, must not depend upon receiving the reports or plants. The Directors will do all in their power to meet the wishes of any who subscribe after that date, but cannot promise anything more than the current numbers of the magazine.

Those who may desire to make an effort to increase the circulation of the

Horticulturist will be furnished with a sample copy and receipt book, on application to the Editor at St. Catharines, or to any of the Directors, whose names and address will be found on the third page of the cover. As some remuneration for their labor they will be allowed a commission of twenty per cent. on all new subscribers, and ten per cent. on all renewals of present subscribers, whose names and subscriptions are sent in to the Editor before the first day of January, 1883.

The subscription price is only one dollar a year. Will it be possible for anyone who has any desire to be informed upon any of the subjects discussed in the pages of the *Horticulturist*, or treated of in the Reports, to obtain so much valuable and practical information elsewhere for that sum? The twelve colored illustrations alone are well worth the whole subscription. The information given is drawn largely from the practical experience of Canadian cultivators, and is just such as Canadians need to guide them in their operations. It is the only work of the kind published in Canada, and as such has claims upon the support of Canadians, if it be suited to their needs. And the publication of it is not undertaken for any private ends, but all the funds received are expended in the interests of its readers. The Directors, therefore, look confidently for the hearty co-operation of every one who feels any interest in developing the resources of our country in this direction, and expect through your efforts in this behalf that the subscription list of this magazine

will be at least doubled before the advent of the new year.

FRUIT AT THE PROVINCIAL EXHIBITION.

Notwithstanding the almost entire failure of the leading fruits in many parts of the province, the show of fruit at Kingston was not only large but of excellent quality. The display of apples and pears was hardly as large as it was last year, but the samples shown were generally very fine. In plums there was a marked increase, some very fine collections having been shown from sections that heretofore have not made much of an exhibit of this fruit. The Owen Sound collection carried off the first prize, notwithstanding that the crop was reported to have been a failure this season.

The progress made in the cultivation of grapes is very marked. The extent of the exhibit of this fruit, as well as the beauty and perfection of the samples shown, is very creditable to our grape growers. Each year brings out a greater variety, and more perfect specimens. It is a wonder that every farmer does not devote some space to a choice collection of grape vines. In two years from planting he will begin to gather grapes, and can have a continuous supply of this most delicious fruit all through the autumn. We now have varieties ripening in this climate in August, followed by others that keep up a succession until winter, and in fact, some of them can be kept until after the holidays, such as the Salem, Vergennes, and Iona.

There is one bad practice that seems to be adopted by some exhibitors, namely, that of ringing the bearing branches in order to increase the size of the berries. As this practice greatly impairs the flavour of the fruit, producing watery, dropsical berries, it should not be encouraged, and exhibitors should be restricted to naturally grown fruit. Skilled judges will at once detect these abnormal fruits, and societies should instruct them to discard all such in making their awards.

There was also a very creditable display of peaches. The crop was almost cut off by the cold easterly storm that visited us when the trees were in blossom. The early Crawford seems to have escaped, somehow, in many places, and those who have been thus favoured will reap golden harvests. We now have varieties ripening in July, followed by other sorts which keep up a supply until almost winter.

It is gratifying to note how from year to year fruit culture is developing and extending over the province, as appears from the exhibits which are made at our autumnal shows. We believe, however, that far greater things are yet in store, and that Ontario will be the great fruit growing country of this continent.

THE SHARPLESS STRAWBERRY did as well as ever, being the largest of all as usual, and more productive. It is not particularly heavy soil this variety requires to do well, but exceedingly high culture. The soil must be *rich*, and well manured also; to have it do its best a good sandy loam is apparently the soil best suited to its wants.—*Farm and Garden.*

JOTTINGS BY THE WAY IN THE EASTERN DISTRICT.

In a somewhat busy season, (and tell me the time to the tiller of the soil that isn't busy), I stole a day in the interests of the Fruit Growers' Association, and submit the following, which may interest some:—

App'es.—They should be last on our list. Our report of them must be unsatisfactory. In quantity they are a fair crop, but in most cases diseased, the *Fameuse* so much so as to be almost unsaleable. We try to pare as many as we can, and so used, they are as good as the best, but the process is a *slow one*.

Heartily we will thank the man who will give us the cause of this black spot or fungus, and more him who will give us a cure.

In the *Horticulturist*, March, 1882, is a paper from J. B. Merrill, from which we had hopes that sulphur applied as there suggested would effect a cure. We tried the experiment on 100 trees, and found it a *failure*. It has been suggested to me by one well versed in these matters, that I drove the plug so far into the tree as to prevent the sulphur fumes passing up with the sap; that may be, we will repeat the experiment, using grafting wax to cover the orifice.

Potatoes.—The Early Rose is still the favorite, and buyers ask for it in preference to all other kinds, simply because they know it to be a first-class table potato. So it is, but the Beauty of Hebron is earlier and of better flavor.

The Dempsey is in every respect good, prolific, and good to use the year round. The Peerless I have found among the best for spring use. With fair play it yields abundantly. Although of very large size, I have always

found them sound to the heart. Many of my neighbors last year pronounced it to be the best potato they ever ate.

White Elephant—I planted a peck, the return was 4 bushels. As to their quality I can't speak. Late Rose and Snowflake are both good. I can tell you, however, a big story about the White Star. I had one potato, cut it into 9 eyes, planted in ordinary ground, and had from it 38 lbs. *Satis bene* I say. I boiled one and found the quality good.

I'll weary you and your readers, indulge me with a closing word on grapes. I intended visiting the Beaconsfield vineyard, but the day's time didn't permit. We know their grapes to be early, quite a consideration in these parts; as to quality, the less said the better.

The only man who has been brave enough to go into the business in our section is Mr. William Rice, of Mill-roche. Among many discouragements—his neighbors kindly hinting he was spending the time of many men for nought, his own besides—he has made a very successful start. Tell me, readers, what is worth having without labor and discouragements many. Mr. R. has about three acres planted with Concord, Moore's Early, Brighton, and Champion grapes. They were planted three years ago, trained on trellis six feet apart, seven feet between rows. He finds Brighton and Moore's Early the most profitable. I recommend to him another acre of Beadle's Jessica.

Good luck to our enterprising neighbor. He seems to go on the principle, that whatever is worth doing is worth doing well. That he has done.

If readers have had patience to read so far, we'll forgive them till next time.

JOHN CROIL.

Aultsville, Oct., 1882.

REPORT ON PLANTS RECEIVED FROM THE FRUIT GROWERS' ASSOCIATION.

DEAR SIR,—I send you report on plants received from the Association up to date.

Burnet Grape.—Is growing slowly and steadily. Has sixteen bunches of grapes on it this year, which should be ripe next week.

Moore's Early Grape.—Growing well, strong and healthy looking. Has every appearance of succeeding in this locality.

Saunders' Hybrid Raspberry.—I removed the plant to a sandy soil and manured it well, which has caused it to grow rapidly and bear some fruit. It promises well for next year. Planted it along with 100 Lost Rubies, a fine variety, bore fruit on old stocks same year as planted.

Hydrangea Paniculata.—Does not grow well. It is about the same size as the first year, and will have flowers soon. I planted it in a small keg with rich earth, but it grows no better than at first. It is not a success with me.

I mentioned last year that the Ontario Apple died. It is far too tender a kind for this locality, something like King of Tompkins, which was also winter killed.

I expected to have seen some reports of the Wealthy Apple you distributed and how it stood the winter, but have seen none in the *Canada Horticulturist* as yet. I planted a one year old last fall, and it was winter killed, but fall planting is not suitable here, so I do not consider this a criterion. I have planted this spring 150 one to three year old Wealthys, and expect most of them to come through the winter. I have not lost any trees from the tap root entering the clay soil, as the *habitués* hereabouts said I would; and

have about 200 Fameuse bearing for the first time. I have altogether 1,000 apple trees in good condition.

Yours truly,

J. H. CUMMING.

P. S.—I would suggest your distributing the Arctic plum next season.

St. Hilaire, P. Q., Sept. 12, 1882.

THE GREEN CABBAGE WORM.

DEAR SIR,—For some years past the growing of cauliflower and cabbage has been rendered very difficult and unsatisfactory, owing to the large green grub that feeds on the leaves. About a month ago my cauliflowers were rapidly being destroyed, when I made some strong brine, using common salt, and watered the plants lightly, sufficiently to wet the leaves, but not to soak into the ground and scorch the roots. The next day I found every grub dead, and have not seen a living one since. Hoping that this information may be of much value to cabbage growers, I have thought it worth placing in the hands of the public.

FRANK EVANS.

Orillia, Oct. 3, 1882.

LETTER FROM HON. M. P. WILDER.

MY DEAR SIR,—I have just received the report of the Ontario Fruit Growers Association for 1881. I am happy to state that no better appropriation of the Government's funds could be made than to encourage the development of the fruit resources of the Dominion, whose extent of territory is equal to our own, and much of which is yet to be filled with an enlightened and industrious population. I like the whole book, embracing as it does the "entomological," so closely connected as it is with the successful cultivation of fruits. It is a grand volume, honourable to your society and to the Government.

Yours as ever,

MARSHALL P. WILDER.

THE CABBAGE MAGGOT.

DEAR SIR,—On page 235 of the current number of the *Horticulturist* I see a communication from Prof. Cook, of the Michigan Agricultural College, to the *American Agriculturist* on the destruction of the Cabbage and Radish Maggot.

I would like to know (and no doubt many others would be equally obliged if you can inform the readers of the *Horticulturist*) how the bisulphide of carbon is prepared and how applied to the young plants; as the Professor, while giving the formula for the carbolic acid preparation, does not give the formula for the bisulphide of carbon, although he appears to consider it the most efficient for the cabbage fly, as it "destroys the maggot." If it does this it is undoubtedly the best preparation.

I may add that during last spring I tried the carbolic acid, preparing it and sprinkling the plants according to Prof. Cook's directions, with the single exception that I applied it *twice* a week instead of *once*; but found that, although it did not injure the young plants in the least, it utterly failed to keep the flies from depositing their eggs, or to destroy the maggots; consequently my radishes were totally ruined; and my cabbages only partially saved by my gardener going over the patch every three or four days and carefully removing the soil where the eggs had been deposited from around the young plants, and putting fresh soil in the place; a slow remedy, and as the fly season this year was a very long one, an expensive one; and, worst of all, not by any means a certain one, for it is almost impossible not to miss some of the wee white specks, which are consequently left at the stalk of the cabbage and destroy it.

I would therefore like to try the

bisulphide of carbon remedy, and, with the rest of the cabbage growing world, would hail it with rejoicing, if successful in destroying the pests without injuring the plants.

THOS. G. BRIGHT.

Meaford, Oct. 4, 1882.

REPLY BY W. SAUNDERS.

Bisulphide of carbon is made by passing the vapor of sulphur over red hot charcoal in suitable vessels, and consists of one part of carbon united to two parts of sulphur. It is a colourless liquid, with a very offensive odor and very volatile character. It is inflammable, and its vapor mixed with atmospheric air explodes with violence if lighted. It is a powerful solvent, and one of the chief uses it serves in the arts is as a solvent for India rubber and gutta percha. It is usually kept in drug stores. When poured into a hole in the soil, and the orifice closed, the vapour gradually permeates through the spongy earth and destroys insect life. It is, I fear, too expensive to be used as a general remedy for insects, and its inflammability, and the liability of its vapor to explode when mixed with air would deter many from using it.

London, Oct. 10.

THE ENGLISH SPARROW.

MR. EDITOR,—I would respectfully suggest that you have for discussion at the next winter meeting the following subject: "Is the English sparrow a friend or enemy of the fruit grower?"

I would suggest that you announce the subject early and ask for papers on the subject from all who are in a position to give light on the subject, to be sent to the Secretary in time for the winter meeting.

My own opinion is that this question is an important one or will soon become so as these little Britons increase, and

I think discussion would bring out a good many points for and against the sparrow.

Yours truly,

WM. E. WELLINGTON.

Toronto, Aug. 7, 1882.

EXPLORATIONS IN RUSSIA.

MR. EDITOR,—It will perhaps interest some of your readers to know that there are at present in Europe two enterprising and enthusiastic lovers of fruit from America who are exploring the northern portions of Europe and particularly of Russia, for the purpose of ascertaining what varieties of fruit are successfully cultivated in these extremely cold climates, hoping by this means to find new sorts which will be hardy enough to withstand the rigours of the colder portions of the Northern and North-Western United States and Canada, and thus lay under further tribute the countries which have given to us the well-known apples, Red Astrachan, Duchess of Oldenburgh, Alexander, and Tetofsky. The exploring party consists of Prof. Budd, of the State Agricultural College in Iowa, and Mr. Chas. Gibb, of Montreal. The following post cards have been received from Mr. Gibb:—

"VIENNA, July 22, 1882.—Work interesting, though we have not yet reached the severer climates. Many new apples in England and Germany are in leaf semi-Astrachanic, and some Russian full bloods. Pears in Jardin des Plantes crossed in many cases with northern or southern Chinese forms, cider and cooking pears of Reutlingen, &c. We saw a few thick leaved v. vinifera, two of them as thick as Lindley and one as thick as Concord, from Jura."

"ON THE VOLGA, Aug. 30, 1882.—Here we are in a little boat going down the Volga from Kasan visiting the orchards with a kind Russian friend. The apples now in the market are ahead of our August apples, a fine assortment in size and colour, and some of them fine in quality. The Vladimir Cherry is grown in enormous quantities in that cold climate. Entire trains laden with these cherries leave here for different parts

of Russia. A new dwarf race of hardy plums here of fair quality. Nomenclature very confused here. At Petersburg we find trees and shrubs of country east to the Amoor valuable for our climate, especially the thick-leaved poplars. There are pears of medium quality here hardy enough to grow as far north as the city of Quebec, that is one sort at least. We have had some curious little fruit meetings among the Tartar dealers."

I sincerely hope that the explorations of these enterprising horticulturists will result in the introduction to this country of some new and good varieties of hardy fruits, especially adapted to the more northern sections of our province, and capable as well of being cultivated over the greater portion of the Northern and North-Western parts of the Dominion.

WM. SAUNDERS.

London, Oct. 6, 1882.

THE OTHER SIDE.

DEAR SIR,—I have just read in your valuable paper a letter from an Ottawa gentleman praising very highly his success with the Burnet Grape. I was particularly pleased to hear that the Burnet would really bear fruit outside of Mr. Dempsey's grounds, where it originated. About six years ago I visited Mr. Dempsey in the county of Prince Edward, determined to see this new grape as it appeared on the original vine. I was amply repaid for my trouble, first, by the very pleasant visit with Mr. Dempsey and his amiable family; secondly, by seeing the vine, the fruit of which I then regarded as the best I had ever eaten amongst the outdoor grapes, and I am not sure that I have up to the present time had any reason to change my opinion as to the quality of fruit. The vine with Mr. Dempsey seemed to be a good grower and bearer. It was well loaded with fine fruit, which was ripening a little ahead of the Delaware.

I at once determined to have this vine in my garden. The grapes so much resembled its parent on the European side, the Black Hamburg, while it showed none of the objectionable qualities of the Hartford Prolific, the parent on the American side.

The following spring I procured two vines from Mr. Leslie, and two years later procured five more vines. But I am very sorry that I have had no such pleasant experience as the gentleman who writes from Ottawa. While I fully agree with him as to the great superiority of the quality of fruit, I am sorry to say that the quantity has been very deficient. Although this is the fifth year for two vines, and the third year for five others, I have not yet had a single full cluster of fruit. All I have this year from seven vines are two straggling half bunches, while Rogers 44 planted at the same time, and in the row with the last lot of Burnets has several bunches of fine fruit now fully ripe; and the Rochester, a new grape, planted the same time, from Elwanger & Barry, is loaded with fruit, which has already ripened. The Rochester came through the winter as bright as a currant bush, flowered early and set its fruit well, and is now quite ripe. It is only fair to state that none of my vines had any protection last winter, and while the Rochester and Rogers 44 came through unhurt, the Burnets were either killed to the ground or so badly injured that the late starting shoots gave no fruit, but have made a very good season's growth of wood. I shall this season provide the most ample protection for the Burnet by laying it down and covering it with earth. Should it then bear well I shall not consider the trouble too great if I can only obtain the excellent crops of fruit such as I saw grow upon the original vine. But should my efforts fail I

must either discard the vine or learn some other remedy that may prove more efficacious.

In regard to the Rochester it is very hardy and very early; evidently a good bearer. Bunch and berry similar in appearance, but larger and more compact than the Delaware. Ripens well, with very little pulp and sweet to the centre, with some of the peculiar flavour of the Diana. A very good grape, but not equal in quality to some other new varieties that appear equally early and equally hardy.

Rogers 44 I find every way very satisfactory. A rampant grower, hardy, a good bearer, very early ripening, and of excellent quality. I now give my present impression, subject to any modification that longer experience may produce. I have the Lady Washington, the Jefferson, the Bacchus, the Early Victor, and the Vergennes, all growing well, but not yet bearing. Hope to report further at a future time.

D. REESOR.

P. S.—The Creveling bears so little that I think I shall root it out altogether. I am trying also the White Ann Arbor, but it is not bearing yet.

Rosedale, Toronto, Oct. 5, 1882.

PAPER BAGS ON GRAPES AND BEES.

MR. EDITOR,—I was victimized last summer to such an extent by the bees and flies that I had not a single bunch of perfect grapes in my vineyard, and without any exaggeration the air was positively tainted by the offensive smell from the grapes rotting on the bunches. I never saw such wholesale destruction.

Expecting another onslaught this season I thought I would prepare myself for the vermin, and purchased 3,000 paper bags made on purpose for preserving grapes from these and other pests.

I noticed several very favourable comments about the bags in *Green's Fruit Grower*, published in Rochester, N. Y., and I also wrote to Messrs. Ellwanger & Barry, of the same place, the celebrated nurserymen, whose reply was also favourable, so I concluded to purchase, but I am sorry to say that the result was not so decisive as I expected; and I found on removing many of the bags lately that the grapes were perfectly green, without any colour or flavour. I would certainly not advise my friends to go into it so thoroughly as I did, as I am satisfied it will result in disappointment, still I shall (D. V.) use some to preserve a part of the crop from the action of frost, by which means the bunches so protected can remain on the vines for several weeks after the main crop has been picked.

This brings up the subject of the power of bees to commit the destruction complained of. If, as contended by interested parties, they are not capable of doing so, how does it happen that *this year there are no bees, with a remarkably fine and perfect crop of grapes?* I have not noticed a single bee around mine, and yet plenty of flies. I have been informed that last winter was very destructive to bees, and this certainly looks like it. So far as their power to sting and suck the berries without any other insect making an incision for them, I can only say that I have repeatedly watched them doing so. I am borne out in this by my friend, J. C. Rykert, Esq., M.P., and others of my horticultural friends, to whom I could refer if necessary. And now, my dear sir, excuse my taking up so much of your valuable time, and allow me on behalf of myself and the horticultural world generally, to thank you for your unwearied exertions and the talent you have displayed in conducting the *Canadian Horticulturist*.

turist for so many years, a magazine that has been of the greatest service in developing the horticultural taste of its readers. May you be spared for many years to give us our monthly treat, and may your readers learn to appreciate the sacrifice of your time and talents for their benefit.

Very truly yours,

JAMES TAYLOR.

Yates Street, Oct. 5, 1882.

GRAPES FOR PROFIT.

Inquiry is being made for those varieties of grape which will give the best cash returns to the planter. The writer has been at some pains to make inquiry of fruit dealers concerning the prices paid by consumers and the varieties most in demand, and learns from them that the early grapes are always readily sold at good prices. In confirmation of this a gentleman mentioned that he had twenty-two vines of the Champion; and that he took the fruit from them to Toronto and realized for it forty dollars. Fruit dealers in St. Catharines are selling Delaware and such of the Rogers' varieties as are to be had, at from eight to ten cents per pound, retail; and Concords at five cents. Jessica, an early white variety, was sold at ten dollars per hundred pounds to Toronto and Cobourg fruiterers. The white and red varieties seem to be the most popular, commanding a ready sale at the best prices. The red varieties of the Rogers grapes, known as Agawam, and Lindley, seem to be the best of this colour; while Wilder and Merri-mack take the lead among the black varieties. There is not as yet enough of Moore's Early grown in Canada to enable one to ascertain the estimation in which it is held here, but Sands, Furber & Co., of Boston, write that they sold several tons of it at twelve to thirteen cents per pound wholesale

previous to the 19th of September. The Brighton is a very fine red grape, of excellent quality and prolific, but has not yet been placed upon our market in sufficient quantity to be generally known.

These facts may be of some value to those desiring to plant for market, who will have to take into consideration not only the price to be obtained, but the health, vigour, hardiness, and productiveness of the vine in their several localities.

RASPBERRIES AND BLACKBERRIES FOR PROFIT.

Reliance.—A large, purple red, moderately productive berry. It is of good flavor, looks well in the box, and the cane is quite hardy and a good grower.

Early Prolific.—This is a very good berry, but it is less prolific than the Reliance, and so offers but few inducements for planting.

Highland Hardy is a hardy, very early berry, of good color and quality, but only moderately productive. Still it is considered worthy of culture because of its earliness. It ripens earliest of all, and the canes may be cleaned in a few days, and all the berries sold at a high price; hence it is about as profitable as much more prolific varieties which ripen later.

Turner.—They are very hardy, but in productiveness fall considerably below two or three other sorts. The berry is a handsome bright red, of excellent quality, but not of the greatest firmness.

Brandywine.—The canes are hardy, vigorous and very productive. The fruit is of good size, good color, fair quality and firm.

Cuthbert.—It is probably the latest variety of good red raspberries we have in cultivation. The canes are large, and the foliage luxuriant. The fruit

is of the largest size, conical in form, quite firm, of excellent flavor; a light brilliant crimson when first ripe, becoming a darker crimson, or cherry color, when over-ripe. We consider this a slight demerit, for in a large plantation a portion of the fruit will necessarily be over ripe when gathered, and a box with a portion of the fruit cherry-colored, will not look so attractive as if all were of a light crimson, or bright scarlet. With this demerit, however, we think the Cuthbert now stands at the head of the list of profitable red raspberries. If any variety can successfully dispute its pre-eminence, it is the Brandywine, which can not be dispensed with, on account of its earlier season. As it presents itself to us, Highland Hardy, Brandywine, and Cuthbert, are the three desirable varieties of red raspberries for a succession through the season.

BLACK-CAPS.

Gregg.—The Gregg as is now generally well known, is a firm dry berry, yielding the largest percentage of dried fruit in the evaporator. As a table fruit we should prefer the Mammoth Cluster.

BLACKBERRIES.

Agawam.—This is in some respects the best market blackberry cultivated. While it is a hardy, vigorous grower, and very productive, the fruit is large and sweet all the way through. It is a little inferior in size to Lawton and Kittatinny, and perhaps not as high flavored as those varieties, when at their best, but, as picked for market, it is wholly exempt from that sour core so well known in the Lawton, and is soft and sweet all the way through.

The Ancient Briton is a very vigorous, hardy, prolific cane, and the fruit is nearly the size of Agawam. We think there is a little more of the wild blackberry flavor in it than in any other of the cultivated sorts.

Snyder is now pretty well known. In productiveness, it really excelled any other, the loads of fruit on the canes were just marvellous, and worth walking a great way to behold.—*American Rural Home*.

THE "JAMES VICK" STRAWBERRY.

A few Rochester horticulturists were invited to see the new strawberry James Vick in bearing. W. C. Barry, late President of the Nurseryman's Association; P. C. Reynolds, long Secretary of Western New York Horticultural Society, and horticultural editor of the *American Rural Home*; the Vick Brothers, representing the firm of James Vick; John Charlton and Josiah Salter.

They were first shown rows of the new strawberry from plants set late the previous fall, growing in the same bed with Manchester and Bidwell. The new berry showed twice the fruit of either Bidwell or Manchester, and more vigor of plant. The party were next shown a plat of about one-fourth acre, not manured for many years, common farm soil in the midst of a field of twenty acres of fruit, on which the new strawberry had been permitted to form wide and thick matted rows for the purpose of multiplying plants, from the whole of which plants had been dug a few months previous, tearing and loosening the roots of those remaining. The soil was packed hard and very weedy, showing evidence of neglect, yet under such adverse circumstances, which would lead one to expect no fruit worth gathering, the plants were thickly studded, and the rows fairly ablaze with large, beautifully and evenly colored, firm and shapely berries of superior quality. From this bed was subsequently picked the largest yield of fruit ever gathered from any variety on this fruit farm. Mr. W. C. Barry said that of all the new strawberries he had tested, this

was the most promising. He described the color as bright scarlet turning to crimson, surface glazed, seeds on surface, season medium, quality good. All the party expressed themselves highly pleased with the display of fruit, and ate it with a good relish. The plant is vigorous, with large glossy dark green foliage, the blossoms hermaphrodite (or perfect), the fruit handsome, large, luscious, firm, and in great abundance.

The party returned to Rochester, and were invited to visit a small plantation there of the *James Vick* fruiting under hill culture, the rows lying between bearing grape vines, not the most desirable position as the grape roots must have occupied the entire soil. Here a sight met their eyes that they could not have anticipated, and such a display as probably was never before made by any strawberry. The stools were large and vigorous, and around each was a pyramid of ripe berries piled one on another like a walled fort, and so thick together that a bug could hardly have crawled into the enclosure made by the fruit without climbing the barricade. Berries on every plant were "uniformly of good size," as was remarked by Secretary P. C. Reynolds. The fruit stems were long and stout, but could not sustain the great burden imposed upon them (often 12 to 18 ripe berries on one fruit stem), thus the fruit rested one berry on another in a circle about the plant.

The news soon spread among the lovers of fruit of the city, and early next morning our leading pomologists came to inspect the newest wonder. After these came the younger enthusiasts, the foremen, and others who desired to see for themselves if half were true that had been told them.

Mr. Charlton said that as soon as the Norfolk (Va.), and other large strawberry planters learned of the value of

the *James Vick* for market, and shipment, the demand would be something wonderful.

The following is from the Geo. A. Stone nursery, Rochester, N.Y.:—"Dear Sir: I saw the *James Vick* today at Rochester. It would certainly seem to possess *all desirable qualities*. It is very prolific, firm of texture, and of fine flavor."

Geo. S. Wales, the Bannockburn nurseryman, said he had seen nothing equal to the *James Vick*.

Secretary P. C. Reynolds, of Rochester, N.Y., considers the quality of *James Vick* very good, and well suited to his taste, which is exceedingly critical. With possibly one exception he has not seen anything to equal it in productiveness. He considers it more productive, larger and of better quality than the Manchester.

We sent fruit of the *James Vick* to Mr. J. T. Lovett, over 300 miles distant, and he reports that it came in fine condition. As a shipping variety it is particularly desirable.

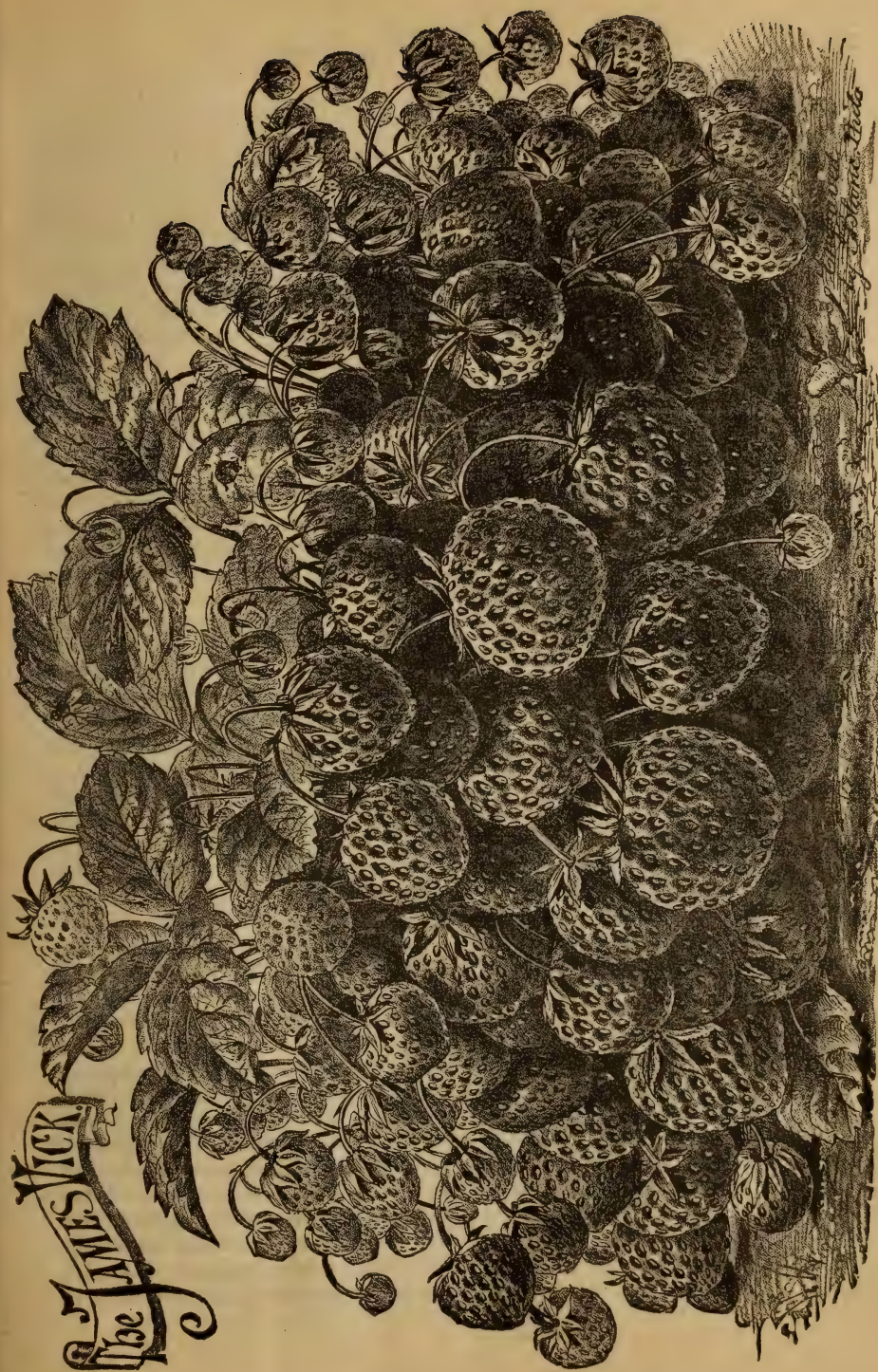
THE POINTS OF MERIT
of the *James Vick* are briefly:

(1) Fine quality, unusual vigor, and hermaphrodite (or perfect) blossoms.

(2) Color, form and firmness of berry, which approach the ideal. No white tips, no coxcombs.

(3) Ability to stand on the vines a week after ripening, without becoming soft, or rotting, or losing quality or much lustre. Instead of softening it shrinks a trifle, and becomes firmer than when first ripe.

(4) Uniformly large size, and productiveness unequalled by any other variety. Two hundred and eighty berries were counted on one average plant, and from one row about 100 feet long nearly two bushels of berries were gathered.—*Green's Fruit Grower*.



CUT OF STRAWBERRY "JAMES VICK." THIS REPRESENTS ONE PLANT WHICH BORE 280 BERRIES.

THE MANCHESTER STRAWBERRY.

We have had a favorable opinion of this new variety from the first, believing it to be well adapted to general field or garden culture, but particularly for market, or wherever firmness and productiveness are desirable. No one can tell positively how it will do in various soils, but reports have been given from men like Peter B. Mead, President Collins, E. P. Roe, Wm. Parry, J. G. Burrow, J. H. Hale, and others entirely disinterested, proclaiming the Manchester, grown on light sea sand, on which the weeds can scarcely survive, as compared with Wilson's Albany, thus far superior. It averages one and a half times the size. It is of much better flavor. It is far more attractive with its bright scarlet color, and finer in appearance. The plant is double the size and far more vigorous. It carries the fruit higher from the ground. The yield, as it appears, is one-half more. In firmness it fully equals the Wilson.

The commission men who have handled the Manchester for three years, report that from its large size, bright color, fine appearance and firmness, it invariably commands high prices. Further, it keeps its color the best of any berry, and "stands up" well. They do not hesitate to "keep it over," and have at different times, when there was a glut in the market, kept it until the second day, when it would present a fine appearance and sell readily at better prices than could possibly have been obtained when it came into market.

Mr Peter B. Mead, the venerable horticulturist and co-worker with Chas. Downing, says; "In this I think the strawberry has been discovered that has long been sought for. I have never seen a strawberry that in all respects impressed me so favorably."

The Strawberry is one of the most enticing and beautiful of all the gifts of

the great Creator, thus the efforts to improve it are never ceasing. Wonderful progress has been made within the past few years, but the end has not yet come; the work has only fairly begun. We have strawberries large and vigorous enough—we now want firmness and quality, and those fruiting much earlier and later. We give the Manchester a hearty welcome.—*Fruit Grower*.

BLACK RASPBERRIES AND BLACK-BERRIES.

There is room for extension in the culture of these two species of small fruits. Black raspberries are easy of cultivation—nearly as easy as potatoes—as, if planted in rows each way, six feet by three, nearly all the culture can be done by horse and cultivator or horse-hoe. They are not only easy of culture, but it looks as if there would be a large demand for them, both in the green and dried condition, and at rates that will leave the grower some profit. Dried raspberries are a favorite dried fruit and when the market is extended over the world, the demand must be enormous, and the price of the dried fruit must be considerably lower than it has ever yet been not to compensate for the cost of growing.

As for profitable varieties, we have been favorably impressed with the Tyler for an early one. We saw a large plantation on the grounds of Robert Johnston, near Shortsville, Ontario county, and the canes were remarkably vigorous. He informed us that the canes are very hardy, passing through the winters without injury, that they ripen the earliest with the exception of Davison's Thornless; that they are very productive, and of a dead black color, no bloom. They are also of excellent quality, with fewer seeds than most other black-caps.

The *Gregg*, is a vigorous grower, with a very strong cane, and a marvel in

production. Mr. Weeks, of West Webster, informed us that he planted 304 plants in the spring of 1881. That at the first picking this season he picked 96 quarts, and that at the second picking he picked twice that amount, or 288 quarts in the first two pickings from only 304 plants. Mr. Johnston had found them very prolific, and like accounts come from every direction.

With these two varieties the season of black-caps may be extended over several weeks, and the evaporators kept running upon them until blackberries are ripe.

Blackberries—We are not certain that this fruit can be grown so as to evaporate with profit, yet we are not certain that they may not, if such prolific varieties are planted as we have seen in bearing this year. We have mentioned the Snyder, Ancient Briton and Agawam, as growing on the grounds of Mr. C. M. Hooker, near Rochester. We certainly think they could be grown at pretty low rates if in demand for evaporating.

On Mr. Johnston's grounds we saw the *Western Triumph*, on much weaker soil than Mr. Hooker's, but scarcely less productive. It is much hardier, even, than the Snyder, having stood the winter where the latter froze down. The canes are perfectly loaded down with fruit, which is of good size, nearly round, and sweet all the way through. It is not only sweet, but the seeds are small and not at all prominent. While the Lawton, Kittatiny and Early Wilson are larger, and when *dead ripe* of exquisite flavor, they are very liable to be winter-killed, and when picked (as they usually are for market) as soon as black, are hard and sour, and have done much to bring the blackberry into disrepute as a market berry.

Mr. Johnston also grows the *Knox*, which is quite hardy, and very produc-

tive. It is later than *Western Triumph* and was unripe. We found growing in the *Knox* plantation, occasional hills of a blackberry unknown to us, that was very delicious. It was of good size, longer than *Western Triumph*, soft, and of very high flavor.—*Rural Home*.

HANDLING APPLES.

J. S. Woodward, a large fruit-grower of Niagara county, N. Y., furnishes the following to the *New York Tribune*:—

"Apples always, whether in barrels or piles, when the temperature is rising so that the surrounding air is warmer than the apples, condense moisture on the surface and become quite moist and sometimes dripping wet, and this has given the common impression that they 'sweat,' which is not true. As they come from the tree they are plump and solid, full of juice; by keeping, they gradually part with a portion of this moisture, the quantity varying with the temperature and the circulation of air about them, being much more rapid when first picked than after a short time, and by parting with this moisture they become springy or yielding, and in a better condition to pack closely in barrels; but this moisture never shows on the surface in the form of sweat. Keeping apples very much depends on the surroundings; every variation in temperature causes a change in the fruit, and hastens maturity and decay, and we should strive to have as little change as possible, and also have the temperature as low as possible so the apples do not freeze. Some varieties keep much better in open bins than others; for instance, the *Greening* is one of the best to store in bins. A very good way for storing apples is to have a fruit-room that can be made and kept from 32 deg. to 28 deg., and the air close and pure; put the apples in slatted boxes,

not bins, each box holding about one barrel, and pile them in tiers so that one box above rests on two below, and only barrel when ready to market; but this is an expensive way, and can only be practiced by those with limited crops of apples, and it is not at all practicable for long keeping, because in this way they lose moisture much more rapidly than when headed close in barrels, and become badly shrivelled.

"All things considered, there is no way of keeping apples quite so good and practicable as packing in tight barrels and storing in cool cellars; the barrel forms a room within a room and prevents circulation of air and consequent drying and shrinking of the fruit, and also lessens the changes of temperature, and besides more fruit can be packed and stored in a given space. The poorest of all ways is the large open bin, and the objections are: too much fruit in contact; too much weight upon the lower fruit; and too much trouble to handle and sort when desirable to market. It was formerly the almost universal custom in western New York to sort and barrel the apples as fast as picked from the trees, heading up at once and drawing to market or piling in some cool place till the approach of cold weather, and then putting in cellars. By this method it was impossible to prevent leaves, twigs and other dirt from getting in, and it was difficult to properly sort the fruit, and if well sorted, occasionally an apple, with no visible cause, will entirely and wholly rot soon after picking. Some varieties are more liable to do this than others, but all will to some extent; this occurs within a week or ten days after picking, and when barrelled these decayed apples are of course in the barrels, and help to decay others. Although packed ever so well and pressed ever so tight, the shrinking of the fresh picked fruit soon

makes them loose, and nothing is so bad in handling apples as this. Altogether this was a very untidy method of handling apples, and has been entirely abandoned for a better.

"The very best method depends a good deal upon the quantity to be handled; if only a few hundred barrels they can be put in open barrels and stored on the barn floor. Place empty barrels on a log-boat or old sled; take out the upper head and place it in the bottom of the barrel; on picking the apples put them without sorting directly into these barrels, and when a load is filled draw to the barn and place in tiers on end along one side of the floor; when one tier is full lay some strips of board on top and on these place another tier of barrels; then more boards and another tier; two men can easily place them three tiers high, and an ordinary barn floor will in this way store a good many barrels of apples. Where many hundreds or thousands of barrels are grown, it is a good plan to build houses or sheds in convenient places in the orchards for holding the apples as picked; these are built on posts or stones about one foot from the ground. The floors, sides, and ends should be made of strips about four inches wide and placed one inch apart, and the roof should project well on every side. The apples, as picked, are drawn to these in boxes or barrels and piled carefully on the floors about three feet deep. Where these houses are not provided, the next best way is to pile the apples, as picked, on clean straw under the trees in the deepest shade to be found.

"After lying in any one of these positions about ten days, they should be carefully sorted and packed in clean barrels, placing at least two layers on the bottom of the barrels, with stems down; after this fill full, shaking moderately two or three times as the filling

goes on, and with some sort of press, press the head down so that the apples shall remain firm and full under all kinds of handling. Apples may be pressed too much as well as too little. If pressed so that many are broken, and badly broken, they will soon get loose and rattle in the barrels, and nothing spoils them sooner than this. What we want is to have them just so they shall be sure to remain firm. Careful shaking so as to have them well settled together, has as much to do with their remaining firm as the pressing down of the head. After the barrels are filled and headed they should at once be placed on their sides in a barn or shed, or in piles covered with boards from sun and rain, or if a fruit house or cellar is handy they may at once be placed therein; the object should be to keep them as cool and at as even a temperature as possible. In all the operations of handling apples, from picking to market, remember that carelessness and harshness always bruise the fruit, and that every bruise detracts much from its keeping and market value; and always remember that 'honesty is the best policy.'

THINNING FRUIT.

It is the tendency of every well cultivated, healthy fruit tree, to set more fruit than it can perfect or bring to a good size. This is especially true of pears, and if large, well ripened fruit of this kind is desired, the fruit must be thinned out well, commencing when the fruit is the size of hazel nuts, again when they are about half grown, and again a couple of weeks before maturity. The latter "thinning" is frequently marketed, furnishing the "small boy" with cramps and cholera, and the doctors with business. In thinning out the fruit, do the work carefully, removing the smallest and imperfect ones only, and not like an Irishman we once

had who commenced with the largest ones, "to give the little ones a chance." The thinning should be done only by hand, for jarring the trees, especially the pear, is apt to work injury in many ways, and too often brings down the best and heaviest fruit, which should remain.—*Farm and Garden.*

GREEN PEAS.

TESTS WITH THE LATEST ENGLISH NOVELTIES.

Several years ago the *Rural New Yorker* tested 27 different kinds of peas—most of them well-known—and now reports upon tests made the past season with 14 different kinds. The seeds of most of them were procured from the originators or introducers in England, the older kinds being raised beside them for purposes of comparison as to yield, productiveness, habit, etc.

The soil, a clay loam, was well fitted by spading and raking, and manured with chemical fertilizer at the rate of 400 pounds to the acre and a light dressing of hen manure and muck. The peas were planted two inches deep, two inches apart, in drills three feet apart.

The object in planting the Old Philadelphia beside Landreth's Ex. Early, was to determine how much improvement the latter, which is now one of the most popular of the earliest class, showed over the former from which many of the earliest peas of to-day have sprung.

The object in planting the Little Gem beside the American Wonder, was to note differences which had previously seemed a little obscure.

The object in planting both the Telephone and Telegraph was to ascertain by more careful observation than had been made in tests of three years ago, whether there were any marked differences between them. All were planted (by hand) April 3rd.

Landreth's Extra Early.—June 18th there were more peas upon this variety fit to be picked than upon any other. The first mess was gathered June 21st, when a few were also picked from Laxton's Earliest of All. The vines grew a little over three feet in height. They branch very little, are rather slender and average seven to eight pods to the vine. This strain is evidently carefully selected—the vines growing to a uniform height and maturing the fruit as nearly all at once as it seems possible for any variety to do.

On June 26th, 200 pods were picked which weighed 33 ounces—contained 1,202 seeds which weighed 13 oz.

The Old Philadelphia Extra Early.—This proved to be, with Laxton's Earliest of All, the second early. In point of earliness we could note no difference between the two. The first picking was made June 23rd, and at the same time a few were ready to be picked upon the American Wonder and Wood's Ex. Early. The vines are strong, not much inclined to branch and grow $3\frac{1}{2}$ feet in height.

June 26th—200 pods weighed 32 ounces, which contained 970 seeds which weighed 10 ounces.

Laxton's Earliest of All.—This pea was extensively advertised in England last year as the earliest pea known. It was no earlier than the Old Philadelphia. The vines grow a little over three feet and are notably slender and never branching, and bear seven pods to a vine. The variety has been carefully selected. All the vines grew to the same height, were uniformly productive, maturing to the tops nearly at the same time, so that the entire crop may be taken off before wrinkled peas are ready and the ground be prepared for later crops. The same, however, may be said as to the Philadelphia, Landreth's, American Wonder, etc.

On June 26th, 200 pods weighed $32\frac{1}{2}$ ounces—contained 1,300 seeds which weighed 12 ounces.

Wood's Extra Early.—An excellent variety maturing with Philadelphia, from which it is distinguishable by a more vigorous growth of vine. It also grows one foot taller.

June 27th, picked 200 pods which contained 1,020 seeds weighing 14 ounces. The pods (fruit entire) were not weighed.

American Racer.—The vines grew to the height of five feet. The pods which formed near the ground were ready to pick June 25th, though those immediately above were quite immature. Still higher up the blossoms had not yet set, while at the tops of the vines the flowers were not even in bloom. July 2nd, were picking them from within a foot of the top. The tips of the vines were then in bloom while just beneath were many young pods. The last picking was made July 10th, which was 16 days after the American Wonder was in bearing, and other wrinkled peas, such as the Telephone, Edinburgh Beauty, etc., were in use. As to quality, there is very little choice between the smooth kinds; provided they are in the same stage of maturity and cooked just alike it is hard to detect any differences. It is very evident that nobody wants a smooth pea when he can get a wrinkled pea. The peculiarity of the Racer, that it is in use a long time, is therefore no great merit. On the one hand, we have earlier peas—as Daniel O'Rourke, First and Best, Philadelphia, Landreth's Extra Early, etc., and, on the other, peas very much better in quality.

The Racer bears an average of 14 pods to a vine, each pod having from five to seven peas, never over eight. The pods are well filled.

June 27th, picked 200 pods which

contained 1,090 seeds weighing 14 ounces.

American Wonder.—The vines grow from six to eighteen inches high, depending upon the soil and situation. The stems are strong, needing no support and generally branch near the surface of the soil, the branch bearing from two to four pods—the entire plant from ten to fifteen.

On June 26th, picked 200 pods, which contained 954 seeds which weighed 10 ounces.

The Wonder, besides being of the first quality, is within two or three days as early as any of the smooth kinds. This, to the vigilant gardener is of the first importance, and may determine a loss or profit upon his main crop. But for home use, sow sparingly of the smooth kinds and trust to the Wonder for the bulk of earliest peas. There is all the difference in sweetness between smooth and wrinkled peas that there is between sweet and field corn.

McLean's Little Gem.—This is scarcely less prolific than the Wonder, and the quality is much the same. But the vines grow taller under the same conditions and it seems to be about one week later. The pods average fewer seeds, while the seeds average larger.

July 1st, picked 200 pods which contained 720 seeds, weighing $10\frac{1}{2}$ ounces.

Telephone.—Vines very strong, growing four feet high, averaging 18 to 20 pods to a plant. It branches considerably, the branches bearing from three to five pods. The pods average six to seven large wrinkled seeds of the first quality. First picking July 4th.

July 9th, picked 200 pods which weighed 66 ounces, contained 1,320 seeds weighing $28\frac{1}{2}$ ounces.

Telegraph.—Vines very strong, growing four feet high, averaging 16 to 18 pods to a vine. The vines branch, each branch bearing three to five pods.

The pods average six to seven large, wrinkled seeds of the first quality. First picking July 4.

July 9th, 200 pods weighed 65 ounces, contained 1,332 seeds which weighed 28 ounces.

Edinburgh Beauty.—Vines strong, two to two and a half feet high. Each seed usually sends up two main stalks, each of which branches freely. There are often 50 pods from a single seed. Almost invariably two pods to every fruit stem—i.e., the pods are borne in pairs. Peas (seeds) of large size. They are darker when cooked and not quite as sweet as the next—inferior to the Telephone or Telegraph in quality.

July 10th, 200 pods weighed $30\frac{1}{2}$ ounces, contained 870 seeds which weighed $18\frac{1}{2}$ ounces. Considering the height of the vines, their wonderful fruitfulness, and the large size of the peas, (seeds), this is a remarkable variety.

Dean's Dwarf Marrow.—Vines very strong, two to two and a half feet high—15 to 20 pods to a vine. Small pods for marrows, though larger than those of the Edinburgh Beauty. Much branching; uniformly large seed; often two pods to each peduncle. When cooked they are of a very light green color, sweet, but not quite so tender as Telephone.

July 10th, 200 pods weighed 40 ounces, contained 1,108 seeds which weighed 24 ounces.

Carter's Stratagem.—A remarkable variety. Vines very strong and needing but a little support. Twenty pods to a vine. The vine branches just under the surface of the soil, two stems generally of equal vigor growing to a height of 2 to $2\frac{1}{2}$ feet. The pods are generally borne singly.

July 11th, 200 pods weighed 80 ounces, contained 1,420 seeds which weighed 42 ounces. The quality is

excellent. It will be seen that this gives the greatest number and weight of seeds to a pod as well as the largest pods. Still, it must not be overlooked that whereas this averages but 20 pods to a vine, the Edinburgh Beauty, for instance, bears 50.

Pride of the Market.—Vigorous vines two feet high, branching laterally only. Notes as to quality missing.

July 12th, 200 pods weighed 64 ounces, contained 1,388 seeds which weighed 32 ounces.

REMARKS.

What is gained either to the market or home gardener by raising varieties of peas that grow five feet high, when other kinds growing from two to three feet high will yield more peas of as good a quality? Compare, for example, the old and favorite Champion of England with Carter's Stratagem.

Why should we sow smooth peas, which are always of inferior quality, when varieties of wrinkled peas may be sown, which are of the first quality and will yield just as well?

Upon the south half of the pea test-plot, salt at the rate of nine bushels to the acre was sown broadcast. There was no difference in germination, growth or yield that could be discovered!

SHOULD CONCENTRATED FERTILIZERS BE DRILLED IN OR SOWN BROADCAST?

If the most rapid growth from seed is desired the manures and seed should be drilled together; in this case, however, the manure should be confined to superphosphate alone, as almost all other artificial manures are injurious to very young plants. Our turnip crops suffer greatly from a small fly, which eats off the leaves as they start from the ground. We mix the seed and superphosphate

together, and push the plant through its early stages with great rapidity; This is, therefore, a special case for a special object; and for all other cases I should recommend sowing manures broadcast as evenly as possible over the whole surface of the soil. Roots follow the food. If you place the food in one place, the roots will concentrate there, consequently they will not have as much command of the moisture of the soil as they would have if spread all over the soil. Except, therefore, in the case of superphosphate with turnips the whole of our manure was sown broadcast, and plowed or harrowed into the land before the seed is sown. With Autumn-sown wheat we apply salts of ammonia and nitrate in the Spring.—J. B. LAWES, in *Rural New Yorker*.

AMONG THE RASPBERRIES

It has been my good fortune during the present week to enjoy a run through two of the leading small fruit nurseries and gardens in the region near New York City—those of J. T. Lovett, at Little Silver, N. J., and Rev. E. P. Roe, at Cornwall-on-the-Hudson.

The raspberries, both the red varieties and blackcaps, were in the height of perfection, and it afforded an excellent opportunity to consider the merits of the various sorts that were growing both in the nursery rows, and in the fields in which the pickers were at work. I was particularly pleased with the "exhibition plats" which were found at Mr. Roe's place. Here the different varieties, old and new, were brought together side by side in short rows, and under the same circumstances of soil and culture they offered an accurate and rapid means of comparing and contrasting the varieties. At a glance, the comparative vigor of the canes can be seen, and the relative production of the kinds, size of berries, color, &c., as

they stand side by side are very evident. This method of testing the varieties cannot be too highly recommended, and each grower of small fruit stock should have a portion of his ground devoted to this experimental work.

Among the blackcaps that looked the most promising was the Centennial Black, an early variety and one of the best, the quality being fine and well suited for marketing. The Seehauken is one of the new comers, and has the important point of being early, in quality it is not far from the old Doo-tittle. The Mammoth Cluster was in its prime with its full clusters of large plump berries. This variety comes very close to the Gregg, which is quite generally accepted as leading in the race of the blackcaps. The Gregg is somewhat larger than the Mammoth Cluster, has more bloom upon the berries, but in productiveness, quality, and fitness for marketing—that is firmness—there is no great difference. One could not go amiss by selecting the Centennial Black for the early sort, and the Gregg for later fruiting.

At Mr. Lovett's I found the pickers doing a profitable business among the Turners—one of the vigorous varieties of the red sorts, bearing an abundance of fruit of good flavor, though lacking in firmness, and therefore needing care in marketing. The Reliance is also a vigorous grower, very productive, and the dark berries are of more than average quality. Its growing near the Belle de Fontenay (or Henrietta) made a comparison between the two easy, and the differences are far from striking. The Herstine is one of the earliest of the reds, and being quite soft is unfit for marketing, but one of the best varieties for family use, to be eaten as soon as picked. Mr. Roe had the Christine, a new sort which is very late, a few of the most forward berries being

ripe. It was not a fair trial, but the flavor of those tasted was not equal to some of the others.

The berry, of all the varieties of red raspberries, is undoubtedly the Cuthbert, it having so many of the important qualities of this small fruit. The vines are wonderfully vigorous, standing far above all its competitors in the "experimental plat," and very productive. The berries are large, and what is of most value in a money point of view, they are firm, making it suitable for shipping to a considerable distance. The quality of the berry is high, and withal, the Cuthbert must stand at the head, purely on its merits. The Patrican is a larger berry than the Cuthbert—in fact it is the largest of the "reds." It being something quite new, more time must be given it before its place can be assigned. From the vigor of the vines, the large size of the berries, its productiveness—to judge from the few canes which were seen—and fineness and flavor of the fruit, this variety will stand high. Its origin is not known.

Of the light-coloured varieties, the Brinckle's Orange is still the type of excellence among all raspberries. Next to it, among those of the same shade of color, comes the Florence, it being a profuse bearer, and the fruit rich in flavor and fair to look upon.—*Country Gentleman*.

FERTILIZERS FOR HOUSE PLANTS.—When plants are in a growing state they may be stimulated by the use of guano water. A small teacupful of Peruvian guano dissolved in a pailful of rain water is strong enough; water the soil with this once, or at most twice a week. The Water of Ammonia (Hartshorn) of the shops is about as good, and can be had everywhere. If of ordinary strength add a fourth of an ounce (two teaspoonfuls) to a gallon of water, and use as above stated.—*American Agriculturist*.

TREE PLANTING.

This is a good, old-fashioned expression that all may understand, but is it high-toned enough to suit the advance of to-day? No! not by a great deal. It must be called Forestry, to coincide with modern taste and fashion. So let it be, say all the truly interested, for though the mere planting of a tree, or even of a row of trees, or of an avenue along the public highway, be but a small beginning of the art of forestry, still it is a beginning, and so are the institution of an Arbor-Day by State authority, and the planting of memorial trees upon that or upon any other suitable day.

The setting-out of a little tree by every child connected with our glorious common schools, either upon the school lot, at their homes, in the parks, or on the public highway, cannot fail to exert a most happy influence upon the individual and upon the community where it is practiced. The child (who is father to the man) thus learns to love and respect these noble representatives of the vegetable kingdom. Those who have witnessed the planting of, or afterward enjoyed the comfort and pleasure afforded by, these shade-trees, though never before appreciating these objects either in their financial, economic, sanitary, or æsthetic aspects, are now obliged at least to pause in their career of indifference, or perhaps even of destructive feelings toward trees. The establishment of tree planting societies and village improvement associations cannot fail to benefit all those who are engaged in them, and the general public reaps the benefit of their efforts to embellish and improve the country.

Many thousands of people in the State of Ohio were induced to plant roadside trees in consequence of the Governor's proclamation making Arbor-Day a public holiday, and this was

suggested by those who were making arrangements for the first meeting of the Forestry Congress at Cincinnati, which instituted the extensive planting of Presidential, Pioneer, Heroic, Authors', Teachers', and other groves on the beautiful hilltops of Eden Park—within the city limits. Every child who participated upon that occasion, or who aided, and witnessed the tree planting in the school-house lots scattered through the country, and along many of the thoroughfares, may thus have been made an incipient forester, and will at least have learned to look upon a tree with increased respect. In many of the country school lots the trees bear the names of the pupils who planted them.

Though not forestry, all these efforts have their use, and they exert a most happy influence upon the people by directing their attention to the subject. They help to familiarize us with trees; they direct our attention to the great subject of true forestry, and thus become valuable means of making the people better acquainted with the possibilities of the forestal wealth which should exist in our country.

In a large portion of our land nature has already provided us a most noble heritage of trees, many of them of great value, and only after these had been removed, and the native woodlands were robbed of their most valuable numbers, do we, the immediate descendants of the wood-chopping, timber-destroying pioneers—only then do we begin to realize our loss and to think of the absolute necessity for restoring the forests.

There are so many solid and substantial reasons for the conservation and, where necessary, the replanting of areas of woodlands, it is surprising that so intelligent a people as we proudly boast ourselves to be, should have allowed the country to reach the very verge of

destitution before attempting to restore the woodlands.—DR. JOHN A. WARDER, in *Rural New Yorker*.

SMALL FRUITS FOR THE FARMER'S TABLE.

The established fact that the cultivation of small fruits is neglected to so great an extent by farmers as a class, seems the more difficult to understand when, with so little effort our tables can be supplied with an abundance of the choicest and the best. But instead, many, if not a majority of farmers, in possession of hundreds of acres, seem content with a few of the native sorts that can be gleaned from the fence corners, by-ways &c., when a few plants of some of the tried and popular varieties planted near at hand would furnish an ample supply for a large family during the entire season. My unpretentious one hundred Gregg raspberry plants, ordered from a reliable and trustworthy nurseryman, and planted one year ago last spring, have afforded us a liberal allowance for the table, canning purposes, &c., besides supplying the wants of many of our neighbors. The bushes, when heavily laden with rich and luscious berries, were greatly admired by all, the ladies particularly being enthusiastic in their praise, all expressing their determination to endeavor to have plants set the coming spring. And when we consider that it is but little more trouble to plant and cultivate a row of berry bushes, than one of corn or potatoes, it seems all the more unaccountable that so many farmers are loth to engage in the cultivation of these smaller fruits that afford so many luxuries and conduce to so great an extent to the happiness and health of the family.

One of our largest and most success-

ful farmers, after having driven nearly three miles, expressed great disappointment at my not being able to furnish him with the three or four quarts required for the tea-table, while threshing, when a row of Gregg's skirting one side of his garden, would have furnished an abundance that the ladies could have picked at their leisure, while with a liberal sandwiching of the red Cuthberts, they could have been made even more palatable. Let us then plant liberally of these smaller fruits that will tend so much to lessen the care and anxiety of those who are expected to furnish a variety for the table three times each of the three hundred and sixty-five days of the year.—IRVING D. CLARK, in *Rural Home*.

LITERARY NOTES.

The *Ladies Floral Cabinet*, New York (\$1.25 per annum), in its October issue presents some choice reading for lovers of flowers. It opens with a timely editorial on "Annuals," followed by another on "Soils," both of which must command attention. The full page illustration of that singular plant, the "Stenotaphron," will attract attention from those who enjoy rare things in the plant world. The recent success with out-of-door blooming of the "Victoria Regia," gives fresh interest to the article on that wonderful Water Lily and numerous minor articles amply repay those who seek information regarding the progress being made in floriculture. The literary and household departments are not by any means neglected, and have fresh and bright, as well as useful articles. Several illustrations brighten the beautifully printed pages. The new management certainly are "pushing" things in the interests of their readers, giving more matter and better than ever, in the long career of this popular "Home Companion."

MORNING GLORIES.

BY FRANCIS D. GAGE.

They said, "don't plant them, mother, they're so common and so poor,"

But of seeds I had no other, so I dropped them by the door;

And they soon were brightly growing in the rich and teeming soil,

Stretching upward, upward, upward, to reward me for my toil.

They grew all o'er the casement, and they wreathed around the door,

All about the chamber windows, upward, upward, evermore;

And each dawn, in glowing beauty, glistening in the early dew,

Is the house all wreathed in splendor, every morning bright and new.

What if they close at midday, 'tis because their work is done,

And they shut their crimson petals from the kisses of the sun,

Teaching every day their lesson to my weary, panting soul,

To be faithful in well-doing, stretching upward for the goal.

Sending out the climbing tendrils, trusting God for strength and power,

To support, and aid and comfort, in the trying day and hour.

Never spurn the thing that's common, nor call these home flowers poor,

For each hath a holy mission, like my Glory o'er the door.—*Selected.*

DOMESTIC RECIPES.

FLY POISON.—Boil one-quarter of an ounce of small chips of quassia in one pint of water; add four ounces of molasses. Flies like it, and it will destroy them.

BETROOT PICKLES.—Simmer the root, till about one-third cooked (from one and a half to two and a half hours); take out and peel, and cut in thin slices. Place in again, and pour on sufficient cold spiced vinegar, made as above, to cover them.

CHLORIDE OF LIME, when used as a disinfectant about the rooms of a house, should be dissolved in water—one pound to three gallons of water. Sprinkle on the floor or bed-clothes, as it will not color. Infected clothing should be dipped in it.

PICKLED ONIONS.—Let the onions lie in strong salt and water for two weeks, take out and peel; put in a fresh batch of salt and water for two weeks longer; then wash clean and let lie in fresh water over

night. Next day drain them well, put in a jar and pour over the lot spiced vinegar. White vinegar gives them the nicest color.

BEAN PICKLES.—One of the most delicious pickles one can have at this time of year may be made in this way, and they will be ready for immediate use: String the beans as for table use, and place them in boiling water, salting to taste. Let them remain until well scalded, not cooked, drain them off and place in cold vinegar. Add spices if you like. Let the beans remain in the vinegar till well cooled, when, if the vinegar be good and strong, they are ready for use. They are tender and delicious.

SPICED VINEGAR FOR PICKLES.—The following is an old and good receipt: Bruise in a mortar two ounces of black pepper, one ounce of ginger, one-half ounce of allspice, and one ounce of salt. If a hotter pickle is desired, add half a drachm of cayenne, or a few capsicums. Put these in a stone jar, with a quart of vinegar, and cover with a bladder wetted with the pickle, and over this a piece of leather. Of course any way of covering equally tight will answer. Set the jar near the fire for three days, shaking it three times a day. To save time it is usual to simmer the vinegar gently with the spices, which is best done in an enameled saucepan.

A FRUIT HOUSE.—An Illinois horticulturist has constructed a fruit house which is to be a protection alike from Summer's heat and Winter's cold. Two rows of posts are set in the ground, two and a half feet apart, boarded up inside and out, and the intervening space filled with straw, packed in as closely as possible. Two sets of rafters are then put on, the upper set three feet above the lower, which are boarded on the under side and the space closely packed with straw, after which a cheap board roof is put on. On the 11th of last August, with the temperature 98 in the shade, it was as cold as an ice-house, and contained a quantity of apples as sound as when taken from the trees 10 months before.

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ROSES.

IT WILL BE REMEMBERED that the Directors have offered a rose plant to those who prefer to receive it as one of the articles to be sent to our subscribers in the Spring; and so, by way of reminder, this number brings to its readers a beautiful colored plate of this beautiful flower.

Fortunately there is no need that we tell of the beauty of the rose. Every one treasures bright visions of them, mingled with memories, and intertwined with associations that give a lustre or a mellowness to their beauty, awakening at the very thought of them emotions of pleasure. Every one admires the rose; every one would grow the rose. But it is not every one who grows the rose that grows roses. Success in this, as in all else, is the outcome of a love that ever burns but never consumes. Down, deep down in the innermost depths of the heart, it is ever glowing. The snows of winter may wrap the rose trees with their frosty mantle, but no chill reaches that love; nothing can ever damp its ardor. Tenderly the true lover waits on his Queen with untiring constancy; none the less when come the autumn days, with the sere

and yellow leaf, than when she is just budding into beauty, or glowing in all the splendor of queenly majesty. To those who can thus care for her, anticipate her needs and guard her from danger, she comes forth in all her loveliness. As an eminent English cultivator has tersely expressed it, "he who would have beautiful roses in his garden must have beautiful roses in his heart."

Much has been written on the cultivation of roses that needs to be modified somewhat to meet the peculiarities of our Canadian climate; hence a few hints are here given that it is hoped may be of some value to our readers, inasmuch as they are the results of some years of experience in growing the rose.

Select for the rose garden a spot that is sheltered from the sweep of the winds, yet not too near to growing trees, lest their roots rob the roses. If it be practicable, let groups of evergreens break the force of the winds, and temper their fury.

Mulch the ground with a liberal hand both summer and winter; thus will the roots be protected from mid-

summer heat and winter's frosts, and the ground be enriched and kept moist.

A clayey loam that is well drained and well enriched is most congenial to the rose. Keep the bed well enriched by a liberal supply of fertilizers, in which ground bone may play a conspicuous part. Sods gathered from an old pasture, and composted with manure from the cow-stable, make an excellent top dressing.

The ground should be kept loose and friable and entirely free from weeds. Frequent stirring during the growing season is very important, whether weeds have made their appearance or not, unless the ground is kept moist and friable by an abundant mulch.

In winter protect the plants with evergreen boughs thrust into the ground around them. This will prevent the sun from injuring them by its strong shining after severe freezing.

THE BURNET GRAPE.

I think there need be no fears as to the success of the Burnet grape in this section of country. My vine has fruited two seasons. This fall I counted 56 well developed bunches, some of them weighed over 12 ozs. each. All ripened evenly and not a sign of mildew, vine vigorous and healthy. Last year I kept the fruit till the middle of January without the least difficulty. I consider the Burnet and Lindley the two finest flavored grapes in my varied collection. Some varieties mildewed badly this season. The Ontario is doing well, also the Gladioli you sent out flowered finely. The raspberry never grew.

The *Walter, Brighton, Salem, Wilder, Agawam*, and many other fine kinds of grapes, do well around Brockville.

D. V. BEACOCK.

Brockville, Oct. 27, 1882.

THE WORDEN GRAPE.

This is another very hardy, vigorous and productive black grape, ripening a few days before the Concord, and by very many good judges esteemed to be of better quality than that very popular and well-known variety. It does not ripen so early as the grape sent to our subscribers last spring, Moore's Early, but will come in a few days after, and ripen in localities where the Concord hardly makes out to get ripe. It is said to be a seedling of the Concord, which it very much resembles in form and size of both bunch and berry.

The opportunity is given to subscribers to the *Canadian Horticulturist*, who would like to plant a good, hardy and early-ripening grape, to make trial of the Worden without cost, and from our own acquaintance with it we would certainly expect that those who plant it will find it a very valuable variety.

Every year is giving us some new varieties of grapes, many of them of superior quality, and some of them ripening so early as to be specially valuable in our climate. Not very long ago the only grape we had was the Isabella, now we have so many that one is embarrassed by the very greatness of the variety from which to choose, each having some peculiar quality of its own which commends it to the planter. Even the Champion or Beaconsfield, poor as it is in quality, has a constitution so hardy, healthy and vigorous that it will be planted by many in our rigorous latitudes as much better than none.



WORDEN GRAPE.

THE NIAGARA RASPBERRY.

This new raspberry, which is offered to the subscribers to the *Canadian Horticulturist*, if they prefer to give it a trial, is one that was raised by one of the Directors of the Fruit-growers' Association, Mr. A. M. Smith, of St. Catharines. The plant is a strong grower, and apparently hardy. It endured unharmed the severe winter of 1880-81; but was somewhat injured during the much milder winter of 1881-82. The berry is large, considerably larger than the Philadelphia; dark red in color, in this respect much resembling that berry, though not quite as dark. It is a much firmer berry than the Clarke, and ripens a week later than that variety. In productiveness it approaches very closely to the Philadelphia. It does not ripen up its crop all at one time, but continues to yield ripe fruit for a considerable length of time, thus making it a valuable variety for domestic use. The flavor of this variety is excellent, being considerably in advance of the Philadelphia in this respect. It is only by actual experiment of planting it in different sections of the country that its adaptability to our climate can be fully ascertained.

THE PEONIA.

Few persons seem to be aware how great a variety of color and form there is in these most showy flowers—at least this conclusion is forced upon us from the fact that one so seldom sees them growing in the gardens of our flower-loving people. Yet, of all our herbaceous flowering plants none are more hardy, none better suited to our climate, none cultivated with more ease, and none make a more brilliant display when in bloom. The Peonia adapts itself most readily to all soils, and will bear neglect and abuse as uncomplainingly as a Pie-plant root.

After having been planted they will thrive and bloom best if allowed to remain undisturbed for several years, receiving in autumn a good top-dressing of well rotted manure to encourage their growth and improve the size and beauty of their blooms. The flowers are for the most part pleasantly scented, many of them having a very decided rose-like odor. The colors vary from a very dark purplish crimson to pure white; some are white marked with occasional streaks of carmine, some are of a deep, rich rose, others white with a light cream-colored centre, or a light purplish rose, or having the outer petals of one color and the inner petals of another color. The flowers are all double, and very beautiful.

The subscribers to the *Canadian Horticulturist* have the privilege of receiving a Peonia root next spring if they wish as the premium plant, which will give them an opportunity of giving it a trial.

THE FRUIT SEASON OF 1882.

P. E. BUCKE, OTTAWA.

The past season has been anything but a successful one for fruit-growers. In the eastern part of the Province the strawberry plants were badly heaved out by the wet spring, and were consequently much damaged by frost. Neither the currants nor the raspberries gave their accustomed yield. Even the grape vines did not produce their average clusters of rich fruit; and what they did bear were late in ripening, or did not ripen at all. The apple crop was a good average for this section; any trees growing gave good results. Mr. John Conn, of Kemptville, is going largely into ironclad fruit trees, and has a fine young orchard coming into bearing. He is thus enabled to show purchasers what they may expect by purchasing trees at his nurseries. Appearances would indicate that the

Ottawa will eventually become a fruit-producing region. Some fine orchards are also being set out at Como, forty miles down the Ottawa River from the Canadian capital; and more trees are being planted about Ottawa itself. Indications show that the area planted with apples during next spring will be quite large. The despised Champion Grape came in handy and early; one grower sold his first cutting of this variety at 25 cents per pound! Vineyards on all hands are on the increase. Many are cultivating vines who never grew them before, and those who have them are planting more; so that our cold, backward season does not appear to have entirely damped the ardor of vineyardists. It is true, earlier varieties are being sought after. I noticed a new candidate at the Kingston Exhibition for public favor, in the shape of the *Jessica*, and purchased some vines. It is a white grape, or rather a dull shade of green; not large, but bigger than the Delaware, and said to ripen in the open air early in September. Its earliness is its great attraction. It is for sale by the esteemed Secretary of the Fruit Growers' Association, D. W. Beadle, who, I understand controls the market in this variety. One small orchard exclusively of Alexanders, a mile and a half from the city, was a beautiful sight during the end of September; their fine size and bright red color quite took the eye of the beholder. Mr. Johnson Brown was the grower of this fine fruit, and no doubt made large profits on his venture.

TWO RUSSIAN APPLES PROVE TO BE ONE.

Doctor Hoskins, of Vermont, writes to the *Rural New Yorker*, that after testing *Grand Sultan* and *Yellow Transparent* for a number of years, he has come to the conclusion that there is no difference between them.

Also, that *Charlottenthaler*, which he has lately fruited, is only another name for the same fruit.

TRANSPLANTING RASPBERRIES.

P. E. BUCKE, OTTAWA.

A couple of years ago the transplantation of raspberries was recommended in August, when the young plants were in full leaf. This paragraph was copied into a large number of papers, and was eventually sent me by a friend all the way from California. Further experiments this year in the direction of early planting revealed the fact that July is a better month than August; and in future the writer will make his plantations in June if the plants are to be had from three to four inches high. Every one knows who has tried it that late autumn or spring planting, cutting the canes to four or six inches long, does not result in a good plant the first bearing year: the canes are branchy, and as a rule not very strong. But by the early system of moving plants, a good cane is obtained the first year, and the following one a good supply of fruit, thus gaining almost two years on the old system. Try it.

AGING OF WINE BY ELECTRICITY.—If an electric current is passed through new wine the same is said to acquire the properties and characteristics of old wine in a few days.—*Journal Vinicole*.

STRIPED BUGS.—A strong solution of tobacco water will drive the striped bug away from melon vines and the small flea from young cabbage plants. I have found it an unfailing remedy the past four or five years. I apply it while the sun is shining, through a sprinkler several times a day, until the plants are coated with the yellow solution, and rarely find it necessary to repeat unless washed off by rain; the tobacco water is also an excellent fertilizer, and is worth using for that purpose if no other.—J. K. S., in *Fruit Recorder*.

OAK-LEAVED MOUNTAIN ASH.

The growing taste for ornamental trees is a very gratifying indication of the desire of our people to make their homes attractive. The time and money expended in planting beautiful trees and shrubs around our rural dwellings, is repaid four-fold in the increased value of the property if one should ever wish to sell it, and a hundredfold in the added pleasure, and comfort too, of those who occupy them.

In our climate it is of the first importance that the trees we plant should be of a hardy character, that they may be able to endure the extremes of both heat and cold to which they must be subjected. The Mountain Ash is of such a character, not only the American but also the European species; indeed, so far as we are acquainted with them, all the varieties of the Mountain Ash are exceedingly hardy, and well adapted for planting in all parts of Ontario.

The Oak-leaved variety makes a very pretty, compact, medium-sized tree, quite suitable for places of moderate dimensions. The accompanying engraving shows its usual style of growth. It presents at all times a pleasing appearance, but especially in autumn, in common with both the American and European species, when laden with its clusters of bright scarlet



OAK-LEAVED MOUNTAIN ASH.

berries. It is usually propagated by budding on the European or American Mountain Ash, but can also be successfully worked by grafting upon the apple.

There is also a dwarf and a weeping Mountain Ash, both of which make handsome lawn trees.

LAWNS

AS PREPARED AND KEPT ON THE GOVERNMENT
 GROUNDS, OTTAWA.

Much has been written on the subject of the best methods of preparing for lawns and keeping them ; mine is nothing new. Having proved so successful, many inquiries are made what has constituted my success, under so unfavorable circumstances, and as they are always a very noticeable feature by visitors, I give you my treatment.

The position and material on which they are could hardly be worse, standing high above all other surroundings, exposed to every gale, without any shelter, mostly excavated from the rock, no fresh soil having been drawn to them ; what was found on them was so mixed up with the refuse from the buildings in their construction, such as sandstone cuttings and other material, as to be almost unfit for such a purpose.

In the excavation, great care had to be taken of the soil found on them ; of it I made three sorts, putting the first and second qualities into separate piles, and the worse carted away. A large portion of this excavation was from the solid rock over six feet deep, taking nearly two years to do it in, which gave ample time for sod and such like material as I had in my first quality of soil to be well rotted.

In putting on the soil I laid first a foot of second quality, finishing with another foot of best. In carting it on I took care that the carts passed all over, not allowing them to make roads, so that it would be equally pressed down, so that at the present time, six years since, there is not the slightest sag in any part of it. When perfectly level I put on a heavy coat of well rotted manure (I prefer cow manure, with no straw) ; I then gave it two good plowings, cross harrowed it, and raked it ; then I was ready for the

grass-seed. Much diversity of opinion here exists as to when is the best time to sow it ; portions were done four different years, always with the same success. I sow in the fall as late as I possibly can, so that the seed will not germinate till the spring. In sowing, I have it sowed first one way and then crossed, being sure that it is all covered, using plenty of seed with a good share of white clover. I make a harrow of inch boards driving in five-inch nails ; this is drawn by a man and again cross-harrowed, and if any small stones should turn up pick them up, and give a good roll with a heavy hand-roller.

When spring comes, before the frost is out of the ground, you will see it green, and will soon be fit for the lawn mower. Now, as soon as the mower will catch it, continue this all the season, and by the fall of the first year you will have a lawn as close as it is possible to make it, provided you use plenty of water during the warm months ; never wait till it begins to show signs of burning before you water and once get it stunted ; water when the appearance of dry weather sets in ; it is much easier to keep it wet than wet it after it gets dry.

I give a good top-dressing of well rotted cow manure, with no straw only what is well rotted, taking care that no fresh is used, for you will get weeds fast enough into a lawn without that. In the fall I put on the manure roughly, so as that it will help to catch the first snow. In stopping mowing be sure to leave a fair fleece of grass ; if too much your first mowing in the spring will be difficult, if too close you expose the roots of the grass. In the spring, whilst the manure is wet, break it all as fine as you can, then rake ; this manure will not rake off if properly managed, only the dead grass ; after

this pass a heavy roller drawn by a horse with boots on, or a heavy hand one.

These lawns are just as green in the middle of summer as in the early spring. They have been during that time, six years, mowed once a week all summer, and when vegetation is rapid twice. Never, if possible, allow your grass to get so long as to require raking off; cut as short as it will drop unseen, as it will do much to mulch and retain moisture.

In winter beware of allowing roads to be formed by foot-passers, or otherwise, for if you do, your grass is sure to be killed by the formation of ice, or leave an unsightly track for a portion of the summer. If ice has formed on any part of it, cover it up with snow or something else, for as sure as the sun strikes through this ice so sure will your grass be scalded out. Dry frosts early kills grass unless there is an over-abundance of moisture. I generally have snow taken from about doors and put on to such places.

N. ROBERTSON,

Sup't. Gov't Grounds, Ottawa.

A SURE PREVENTIVE OF CHICKEN CHOLERA.

Several experiments have been made during the last five years by different parties for the purpose of preventing the spread of chicken cholera, by inoculation or vaccination. We have during the past two years vaccinated the fowls in nineteen different yards where the cholera was prevailing badly, and in each yard we left some common fowls not vaccinated, and they all died. Out of the 2,000 vaccinated only eleven died, although they were in the same yard with those not vaccinated that were dying daily by the scores. We have every reason to believe that this chicken vaccination is as effective in preventing cholera among fowls as vaccination is

in preventing smallpox among the human family. Vaccinate a hen and in eight days its system will be thoroughly inoculated, then cut off her head, and catch all the blood in some vessel, then pour the blood out on paper to dry; a half drop of this blood is sufficient to vaccinate a hen, and the blood of one hen will vaccinate a whole flock. Catch the fowl you wish to vaccinate, and with a pin or knife make a little scratch on the thigh (just enough to draw blood), then moisten a little piece of the paper with the dried blood on and stick it on the chicken's leg where you scratched it, then let the fowl run, and you need have no fear of chicken cholera. As the result of many experiments, I have now dried blood enough, I suppose, to vaccinate ten thousand fowls, for which I have no use, as I do not sell patent medicines. If any of your readers are enough interested in poultry to try this preventive, by writing to me I will send you free of any charge enough dried blood to start with. All I ask is that they send immediately, before the blood loses its strength, and report the result of their experiment to your many readers.

W. H. GRIFFITH.

Zanesville, Ohio.

Chickens so often have to do with our gardens, our readers will not consider this paper unsuited to a horticultural magazine.

PRIMO STRAWBERRY.

This has not been a favorable season for the strawberry, so cold and backward that the general crop is considered light. I have experimented with all the now leading varieties for the last ten years, and have grown strawberries for the New York market, and I have not found a strawberry to fill the bill so well as the Primo. This is the second year that I have fruited it.

I find it hardy and very prolific, a sure cropper, very attractive in color, being a bright scarlet. But the leading feature of this new berry is its exquisite flavor, possessed by no other variety I know of. This berry I believe originated in Newburgh, N. Y., and is now in the hands of a Mr. J. G. Burrow, Fishkill, N. Y., of whom I bought my stock. I shall plant it extensively another season.—P. A. M. VAN WYCK, *in Farm and Garden*.

CULTURE OF THE CAULIFLOWER.

One of the most greatly prized, by epicures, of all our vegetables is the cauliflower, and by many amateur cultivators it is one of the most difficult to raise in perfection, particularly by those who have not learned its special needs by actual experience. Many a gardener, who cannot tell why, grows this excellent vegetable successfully; and by watching his manipulations, we are enabled to study out a system which, when followed, generally proves successful. Every variety of plant has its peculiar needs, and when those needs are known, provided for and complied with, it becomes a comparatively easy task to grow the plant successfully. I am told that "in Erfurt cauliflowers are grown in low muck lands, with intervening ditches of water, and even then, during dry weather, water from the ditches is thrown over the plants." Water, therefore, is one of the peculiar needs of this plant; but I have known excellent cauliflowers grown in this country on comparatively dry sandy loams, and better ones on loams of a more heavy and retentive character. Water, and manure water, were freely given the plants when once established, and the soil was freely stirred.

This sort of culture, however well it may serve for amateur and small gar-

deners, is impracticable for market gardeners, as a rule. In all cases we must have plants that have good roots, and plenty of them, and for this, time must be given for them to grow. A slow growth of top must therefore be encouraged by starting the plants early in a hot-bed, and transplanting, when small, into other beds partly spent of heat, and later into cold frames, where they may stand till time to transplant into the field. If properly hardened off, they will stand as much frost as a cabbage without injury, and we know that by setting cabbages to the depth of most of the stems' length, they will endure quite a degree of frost. It is important that the plants get established, for an early crop, in the field or permanent beds as soon in the spring as possible, that they may have the benefits of spring rains and cool weather to mature before early summer drouths and heat come on. All the cabbage tribe require a good degree of moisture and cool weather to induce them to head well. If the crop is properly treated, the plants will mature ready for market in mid-June, leaving plenty of time to clear and prepare the ground for second crops.

Cauliflower should never be grown on the same ground oftener than once in a course of five or six crops, and less frequently where two or three crops are annually grown on the same soil. An indispensable essential in the growing of good cauliflower is that manure be liberally applied and the land thoroughly prepared. Thorough culture must be the rule. Lime, superphosphate and guano, in conjunction with farmyard manure, should be applied freely in proportion to the amount of manure available. By pursuing some such course, splendid crops of this most delicious of the cabbage family may be grown annually. The catalogues enumerate and describe a dozen or more

of varieties, but for practical purposes; for the early crop, Early Dwarf Erfurt, Early Paris, and Lenormand's will be found quite as satisfactory as any.—W. H. WHITE, in *Country Gentleman*.

THE CLEMATIS.

The wonderful improvement in these beautiful plants, combined with their easy culture, and the many uses to which they may be employed, has created a popularity and demand for them unequaled by any other climbers.

In answer to several readers about the hardiness and culture of the Clematis, we may safely state that all the best and most beautiful varieties are perfectly hardy in the Northern States, and of the easiest culture. Yet, as with most plants, to obtain best results, a certain amount of care and attention has to be given. Even throughout Canada they are now grown extensively and satisfactorily. Mr. Wellington, who has given much attention to their culture, stated before the Fruit-growers' Association of Ontario that he considered them thoroughly hardy in Canada, capable of the finest results, and that there is scarcely any place where they are inappropriate. "They are excellent upon the lawn as pillar or stake plants, or growing upon stumps of trees; in beds or borders, in the garden, they cover the surface with the richest carpet of brilliance and beauty; for trailing upon verandas, or trellises and arbors, there is nothing so effective and pleasing; over mounds of rock-work, with an intermingling of varieties of different colors, they present an appearance of marvelous beauty, and as pot-plants, trained upon wire frames of any desired shape, they have few equals."

In the Middle and Southern States, Clematisses will grow in almost any

situation if the soil is of moderate fertility, and if the roots of other plants do not rob them of their proper share of nutriment. To insure success in northern latitudes, more care is required, however. Mr. Wellington says in this regard: "Our own experience would lead us to say success depends upon high culture. It transplants well, but is a gross feeder; you can scarcely overfeed it. Select a good, rich soil, in the first place, and then annually or oftener supply heavy dressings of rich, well-rotted manure, thoroughly incorporating with the soil. Frequent applications of liquid manure will be found very beneficial, and amply repay time and trouble. The perpetual qualities of the plant are not fully brought out unless kept constantly growing, and to do this it is necessary to supply unfailing nourishment. In the fall, before freezing weather sets in, mulch heavily, from four to six inches deep, with well-rotted compost, spading into the soil in the spring before the plants begin to start. We do not know of any better system of culture than this. It has never failed to produce the most satisfactory results with us. Should the soil become heavy, we would loosen it with an application of sand or sandy loam."

They carry and transplant easily, and with any fair usage the plant is sure to grow. If liberally fed, the plant each year increases in strength and number of its shoots, and consequently the number and size of its brilliant blossoms. They generally flower the first season, and it is not uncommon for them to give grand results when well cared for, growing vigorously and producing a profuse mass of flowers. The introduction of the *C. coccinea*, with its bright scarlet flowers, adds a new and brilliant shade to their already unsurpassed galaxy of colors.—*The American Gardener*.

THE RAREST AMERICAN WILD PLANT.

Shortia Galacifolia.

The "Venus Fly Trap" (*Dionæa muscipula*) is a plant that is found wild only in a few spots in the United States; but for its peculiar structure has been propagated so much that it is ceasing to be a novelty. There is another species of plant that is more rare than this, and a brief account of its history and a description of the plant itself may not come amiss.

In the year 1839, in examining the dried specimens of a noted English botanist, Dr. Asa Gray came across a plant that had been collected in the mountains of North Carolina over a hundred years ago. It was unlike any other American plant that he had seen, and the species was given the generic name of *Shortia*, in honor of Dr. C. W. Short an accomplished botanist, as well as physician, of Louisville, Ky.

Dr. Gray and other botanists made an extended tour through North Carolina in the year 1841, mainly for the purpose of re-discovering the new plant, but without success. At frequent intervals since that date other botanists have followed the trail of the original discoverers, but in all cases failed to find *Shortia*. It was believed by many that the species must have become extinct.

In 1877 Mr. G. M. Haynes had the good fortune and honor of rediscovering the long sought plant. He found it in MacDowell County, N. C.; and in 1879 Dr. Gray with others made a pilgrimage to the home of the rarest of American wild plants. The locality where it was growing was a space of about ten by thirty feet and contained not over one hundred plants. It is certainly quite remarkable that this plant should be so limited in its range of growth, and also as wonderful that it should be re-dis-

covered so long after it was first found by a wandering botanist.

How quickly a case like this calls to mind the struggle for existence this plant has had! and one is inclined to turn in thought to the unfitness which this plant must have for the battle of life. Had it not been re-discovered it might have become extinct before many years. It would seem as if *Shortia* was, in the evening twilight of its obscure existence, but rescued from death by the saving hand of man.

A few words of description are in order. *Shortia* belongs to the small Diapensia Family, so that it is closely allied to the heaths on one side and the primroses on the other. The plant is a low herb with a creeping root stock from which arise evergreen leaves in shining tufts. The specific name *galacifolia* is given it because its leaves have a strong resemblance to those of a species of *galax*, a related genus. The flower stalks arise from among the leaves, each bearing a single flower, which is pure white and about an inch across. The petals are scalloped and somewhat fringed at the margin, and marked with semi-transparent veins. *Shortia* is a pretty little plant, and its great rarity makes it an object of great interest to all lovers of plants.—BYRON D. HALSTEAD, in *Ladies Floral Cabinet*.

A Kansas paper asserts that the people of that State have planted, under the State forestry laws, 93,000 acres in trees. The cotton wood, on account of its rapid growth, has been planted most abundantly. Some 6,000 acres of black walnut have been put out. These 93,000 acres of trees, if well cared for, will in a few years not only add greatly to the beauty of Kansas scenery, but will materially modify the climate of the State. If the good work goes on, the day will come when Kansas will be as free from drouths as are any of the Western States. The constant winds will also be done away with, to a great degree.—*Prairie Farmer*.

LIMA BEANS.

The great value of the Lima Bean, for summer as well as for winter use, is everywhere gaining for it increasing popularity. The principal difficulty in its culture is to produce it early enough, as the plant is very tender and cannot be planted before permanently warm weather sets in.

Mr. B. G. Smith, who has been very successful in the cultivation of this vegetable, communicated to the Massachusetts Horticultural Society his method, which consists in sowing the seed about the middle of April (being careful to place the eye down), in what are known as "cucumber boxes," filled with loam, five seeds in each. The boxes are without bottoms, six inches in height, seven inches square at the top and eight inches square at the lower part, and are made of half-inch stuff. They cost six dollars and a half per hundred, and his have already been in use ten years. He was the first to use them to forward Lima Beans, and finds them invaluable for this purpose. When the Beans are planted the boxes are placed in the cold grapery. When the plants are about two feet high, the ground is prepared and the poles are set out, and a hole large enough to receive the box is made at the foot of each. A box is then lifted on a shovel, placed in the hole and the shovel withdrawn. The box is then removed by lifting up; the object of making the top an inch smaller than the bottom being to permit this.

It is not advisable to set out the young plants before the first of June, but this is as early as the seed can be planted out-doors, and by forwarding in this way five weeks can be gained, and the beans can be had fresh from the garden from the middle of August to the middle of October.

The Lima Bean is a tropical plant and requires a long season. Any surplus can be dried for winter use, and when

soaked can hardly be distinguished from fresh beans. In saving seed the earliest beans should be carefully selected.—*American Garden.*

STONE'S HARDY BLACKBERRY

Is a chance seedling which originated near Rockford, Illinois. In the spring of 1874, I obtained a few roots of a friend who had been cultivating them in his garden four years with excellent success. I bought some genuine Snyder roots the same spring, and set them both here in Wisconsin, side by side, and have given them the same cultivation, every year since, without any winter protection to either. Have set some of each variety every year since 1874, and after growing this new variety eight years, by the side of the Snyder, I can better describe it by comparing it with the Snyder, which is conceded to be the hardiest variety under *general* cultivation. During the eight years I have had them side by side, the Hardy has always passed through the winter in better condition than the Snyder, which was twice killed to the ground, while the Hardy was injured only on the end of the branches. The crop of the Snyder for those two years was a failure, but that of the Hardy was good.

It is the universal opinion of the many who visit my grounds and see the two varieties side by side in their prime that the Hardy is the most productive and better in quality than the Snyder.

It is an upright and vigorous grower; the wood is stocky, short jointed, ripens early, turns dark red, and is very hardy. The berry is black and glossy when ripe, and has a delicious flavor. It commences to ripen its fruit about five days later than the Snyder, and continues bearing ten days longer; the fruit is well protected by the thick, healthy foliage.—I. N. S.

FLOWERS FOR INVALIDS.

A lady writing about the pleasure that flowers give to invalids, tells the following anecdote to illustrate her words :

"Several years ago, when I was a young housekeeper, I was startled one Sunday morning by the request, from a working blacksmith, for some grapes for his sick wife. We had no greenhouse or vinery. Our little bit of garden was most unassuming, and I could not think what made the man come to me.

"However, I told him that I believed a friend of ours had some early grapes, and if I could get some, his wife should have them in the afternoon. My husband walked out with me to our friend's house. Some grapes were most willingly given for the invalid, and some flowers for ourselves.

"I gathered two or three pretty and sweet flowers—I remember that a carnation and two sweet peas formed part—tied them together, and we took them with the fruit to the sick woman.

"We were taken up to her bedroom. There she lay, pale and emaciated, with an ominous flush on her cheeks. We handed her the longed-for grapes. She said 'much obliged.'

"But when I held out to her the few flowers I had brought, she snatched them so eagerly that I was startled and awed to see the delight they gave to one who was evidently so near the confines of the Unknown.

"I called again in a day or two, and saw the flowers carefully preserved and looking bright in a doctor's medicine bottle close by her bedside. That scene taught me a lesson I have never forgotten, and I hope it is not without its use also."
Floral Cabinet.

THE THREE BEST DOUBLE FLOWERING GERANIUMS for bedding purposes are Bishop Wood, Summit of Perfection and Henry Cannell. All these are of dwarf, compact habit, very floriferous, and produce their flowers in large trusses. They stand our hot, dry summer weather without sustaining the least injury.

NOTES ON BEETS.

Having grown an assortment of Beets for exhibition, I avail myself of the experience gained in growing them (added to previous experience as a gardener of thirty years' service), to note their respective characteristics and value.

The *Blood Turnip Beet* is the favorite standard variety in nearly all private gardens, and as a market Beet. There are many sub-varieties, the earliest of which, introduced about ten years ago, is the *Dark Red Egyptian*. This, when young, is of excellent quality, but needs successive planting if relied upon for all-summer supply, and is of little value under any circumstances for winter use. Previous to the advent of the Egyptian Beet, the *Early Bassano* was the favorite, and a very fine Beet it is. But even had not the Egyptian come to supplant it, *Bastian's Early Blood Turnip Beet* would have done so, I think. Bastian's Beet is rather obscured by the Egyptian, and is not widely grown, but is nevertheless a valuable variety, and has the merit of keeping its tenderness through the summer, not needing successive plantings. *Hatch's Early Turnip Beet* is a variety popular around Boston, while *Simon's Early Turnip Beet* is in use near Philadelphia. But, undoubtedly, the best of this class for general use is *Dewing's*, which is very thorough-bred, with small neck, smooth root, and symmetrical form. I do not know how it could be bettered.

The half-long varieties are quite extensively grown, and are in no particular inferior to any others, though more popular, so far as my experience extends, in private gardens than among market-men. They, as well as the long-rooted sorts, are rather better keepers through the winter than any of the Turnip-shaped; yet all kinds need to be kept packed in sand to retain their plumpness and flavor, and when so packed I find

Dewing's Turnip Beet to keep well until the new crop is ready. The longer sorts, however, are more productive, and a small bed will therefore give a larger supply, which is often very desirable to those whose garden is small. Among the half-long kinds none are better than the *Common Half-long* and *Bastian's Half-long*. The latter is quite distinct, and of a fine, dark color. The *Deep Red Castelnaudary* and *Rough-skinned* belong to the half-long class, but do not seem to have become popular. *Pine-apple* is also a half-long of great merit, with very dark red foliage and roots.

The long-rooted Beets have rather gone out of fashion, except with old-fashioned gardeners; yet we never had a better Beet than the old *Long Smooth Dark Blood Beet*. It is still a favorite with many, and, if the strain of this Beet has been kept pure and well selected, it is especially to be recommended to those who grow for exhibition. And, by the way, nothing looks nicer at a fair than a well grown and well displayed show of Beets. It always attracts attention, and deserves it.

It will not do, in an article like this, to omit the Field Beets; but the list, if I were to choose it, would not be long. *Lane's Improved Sugar Beet* and the *Yellow Ovoid Mangold* seem to me the best, though for shallow soils the *Red* or *Yellow Globes* may be preferred. The *Long Red Mangold* is a nuisance, in my opinion, both in the field and in the cellar, sprawling around, "all over everything," and as crooked as the old lady's fire-wood, which she said was "so crooked that it could not lie still." Yet many grow it without complaint.

The *Chard Beets* do not seem to be very popular, and some seedsmen do not offer them at all. But since the Beet *Anthomyia* fly, with its nasty, white little grubs feeding upon the

leaves, have put an end to Beet Greens, I cannot but advise the planting of Chards, the thick mid-ribs, or chards, of which are an excellent summer substitute for Asparagus, and are, when well grown, as tender and as rapidly reproduced as Spinach. A good variety is the *Swiss Chard*; but, on the authority of that most excellent authority, my own and the public's friend, Mr. C. G. Pringle, I recommend, as still better, *Beck's Improved Sea-kale Beet*, which is quite a curiosity among Beets, the leaf stalks being very broad and thick, and about a foot long, exceedingly tender and fine flavored. I do not think our gardening friends can afford to neglect these varieties if they mean to have "all the delicacies of the season."—Dr. T. H. HOSKINS, in *American Garden*.

DO NOT WASTE BONES.

The bones of fish, bones of fowls, the large and small pieces of bones which are purchased with beef steak and mutton, constitute the very best food for fruit trees and grape vines, if the fragments are only placed where the roots can lay hold of them. Instead of allowing pieces of bones to be cast into the backyard, as food for stray dogs and strange cats, domestics should be directed to deposit every thing of the sort in a small tub provided with a lid. As soon as only a few pounds have accumulated, we take the tub to some grape vine or fruit tree, dig a hole three or more feet long, a foot or two wide, and not less than a foot deep, into which the bones are dumped, spread over the bottom of the excavation, and covered with the soil. The more the fragments can be spread around, the better. But they should be buried so deep that a plow or spade will not reach them. The roots of growing vines or fruit trees will soon find the valuable mine of rich fertility, and will feed on the elements

that will greatly promote the growth of healthy wood, and the development of fair and luscious fruit.

Many horticulturists and farmers purchase bone-dust costing not less than two cents a pound, simply to enrich the soil around and beneath their trees and vines. Fragments of bones are just as valuable as ground bone, although their elements of fertility will not be found available in so short a time as if the large pieces were reduced to small atoms. Nevertheless, if large bones be buried three or four feet from a grapevine, the countless numbers of mouths at the end of roots will soon dissolve, take up, and appropriate every particle. When cast out of the kitchen door, bones are like a nuisance; whereas, if properly buried, they become a source of valuable fertility. Let every person who owns a grapevine or fruit tree save all the bones that pass through the kitchen, and bury them where such worthless material will be turned to some profit.—*Western Farmer*.

CLEMATIS COCCINEA.

Among the new and beautiful plants of recent introduction, we know of none of more value, as a climbing plant, than the *Clematis Coccinea*. Its flowers are from 1 to 1½ inches long, bell-shaped, and of the most intense coral scarlet, shining as if polished, and are produced from the axil of each leaf, on strong, wiry foot-stalks 3 to 4 inches long, standing out boldly from the foliage. The leaves are of a rich, deep, shining green, deeply lobed and of a thick texture. The plant is like the old and well-known species *Crispa*, herbaceous, dying down to the ground each year. Its first flowers appear in July, and are produced in great abundance until the plant is cut down by frost. It is very desirable as a pot plant, particularly in localities subject to early frosts.—*Ladies' Floral Cabinet*.

THE UTILITY OF HIGHWAY TREE PLANTING.

[A paper read at the summer meeting of the State Horticultural Society at Benton Harbor, by Henry G. Reynolds, of Old Mission.]

Not the least valuable among the labors of the Michigan Legislature is a modification of our highway laws, which will within a few years go far toward making every country road throughout the State, a delight to the eyes, a pleasure to the weary traveller, a source of pride to every citizen. This modification of the laws is of two parts, by the first of which our former law relative to cattle at large, has been made an active reality, so that henceforth our lands are to be condemned for public use as common highways, not as common pig yard or cattle pen, unless we locally decide to make them such. This measure, by which our highway will be cleared of all animals not under control, prepares the way for the second step, viz., the gradual planting on each side of every highway a row of trees, to be from eight to ten feet from the fence, and, as near as may be, sixty feet from tree to tree. This will, within a score of years, line every public road in the State with handsome trees, and make Michigan well worth travelling far to see.

There was some opposition to the passage of this law, based upon the idea that large trees along the roadside exerted an unfavorable influence upon the road bed by preventing the drying effect of sun and wind, and thus keeping the road muddy and ensuring deep ruts. If such were to be the result of the law, it certainly was a blunder; but as pictures of mud and deep ruts rise before the imagination, it is true that with them are generally associated the deep shade of the forest. Is this then what we are coming to? No, emphatically not. Who of us in this part of the State cannot call to mind long stretches of road buried in the

deepest forest, where the track is always good? Between Lansing and Owosso, a distance of about 25 miles, the only uniformly good stretch of road is a distance of two miles through a dense forest. On the light soils of a large part of our State, nothing assists more to keep the track in good condition than moisture, and on all such there is no danger from too heavy roadside planting.

But how about our heavier soils? On them certainly, the clearing away of the forests improves the track by making it drier. But, proving that a forest is bad, no more proves a single line of trees to be so, than the drowning of a man in the ocean proves that a foot bath is dangerous.

Let us reflect a little on the process of drying or evaporation; this is an absorption by the air of the moisture contained in those substances with which it comes in contact, and its rapidity varies according to the degree of saturation of this air. Without wind this soon reaches a point that produces equilibrium and so checks evaporation entirely, except as upper strata may gradually absorb part of the moisture of the lower.

A wind however soon changes all this, and by commingling the different strata of air, constantly brings new portions of unsaturated air into contact with the moist surface, and so dries it much more rapidly than still air can. It is an error to say that the sun "drinks up water;" except through heating the air and thereby increasing its capacity for holding the vapor of water, it does not help at all in the process of evaporation. It is the air that is thus made thirsty by the action of the sun, and it is the air which drinks up the water from the surface of the earth or of the ocean. Thus we see that it is of comparatively little

moment whether or not we shade our road bed, if we do not at the same time shut off the winds from blowing upon it. There is no danger of our doing this to an injurious degree if we take care to trim so as to have no branches within eight or ten feet of the ground. Such trees, standing 60 feet apart, will serve to modify the violence of heavy winds, but they will produce none of the effects of a dense thicket, which, by shutting off all wind, almost prevents evaporation, and so keeps the ground beneath it moist at all times. Many muddy roads are inexcusably so, because nothing has been done toward shaping them so as to shed water from their surface. A road on heavy soil, to be good at all times, should be rounded off from the sides toward the centre with a good open ditch at the sides. Where this has been thoroughly done there will be very little cause to complain of the effect of roadside tree planting. No farmer need be reminded of the influence of isolated trees in his fields, which is rather to dry up than to keep moist the soil about them, and by thus drying out to stunt the growth of smaller vegetation near them.

The practice of perfect road-making is wholly unknown in this country as compared with England, Germany, France and Switzerland, and yet in those countries nothing is more common than to see long lines of trees on each side of roads, the surface of which is as smooth and free from ruts or standing water as a parlor floor.

PROFIT IN GRAPE GROWING.—The average yield of Concord is 15 to 20 pounds to the vine, or say about 12,000 pounds to the acre, which, at four cents per pound, about the average price, brings \$480 per acre, deducting for picking, packages, &c., even at this low price there is a net yearly profit of at least \$250 to \$300 per acre. Who says grapes don't pay?—*Fruit Recorder*.

PROFITABLE GROWING OF QUINCES.

W. J. Fowler, in the *Rural New Yorker*, writes to that paper as follows :

"Having just received returns from a small plantation of quinces, I am satisfied that no portion of my land, whether in grain or other fruit crops, pays so well, either for the land occupied or the time and money expended. I have comparatively few trees in full bearing, but from those which fully occupied the ground I sold fruit at the rate of fully \$500 per acre, and this, too, though quinces have, the past fall, sold lower, proportionately, than other fruit. I am satisfied that this is not likely to happen again, and that the price of quinces, profitable as quince growing proves in the right localities and properly conducted, is likely to rule high for years to come. The quince is a more difficult fruit to grow than the pear, despite the blight which affects the latter. There are large areas where pears thrive well where the quince entirely fails. The last winter killed or rendered nearly worthless thousands of trees in this section. The drouth has also seriously affected many young orchards, causing the leaves to fall long before frost, and the few specimens that the trees bore were in consequence small and poor. It will be impossible for such trees to mature buds for next year's fruiting, so that whatever the season the crop is sure to be a small one.

"My success with quinces I attribute to the accident that most of my trees and all those now in bearing were set in low, mucky ground, and with such shelter that their own fallen leaves and those of an adjoining apple orchard made a good annual mulch. The trouble in growing quinces has been lack of hardiness in our severe winters. It is not the trunk and top that are tender, but the root. I have always noticed

that trees in exposed situations were killed in years when the frost penetrated deeply. In a mucky, rather wet soil, covered with a mulch of leaves, the frost has rarely penetrated to the roots of my older quince trees. Since I have learned this requirement of the quince I have taken some pains to gather leaves and put them under my quince trees, doing this easily, as they are on the bank of a small brook, which is full of leaves every fall. This winter I shall add a little well-rotted stable manure, as there is no crop to which I can apply it where it will do more good. I am not afraid of making the soil too rich for quinces, as the heavier manuring I give, within reasonable limits, the larger and fairer will be the fruit. I am not sure that a vigorous growth will not also prevent to some extent the evils of twig blight and the red rust on the fruit, which was less prevalent on my trees the past summer than on many that I have seen.

"Another help to success is a liberal application of salt every spring, and occasionally during the growing season. It is not good policy to empty brine from old pork barrels under the quince tree. Too much is liable to be thus given, and the tree may be killed. The salt is not a manure for the tree, but valuable mainly in keeping the soil cool and moist. About one quart to a tree, sown as far around, at least as the branches extend, is sufficient at one time. The salt also has an effect in making the fertility of the soil more available. The mulch should be kept up all summer, and occasionally renewed to keep out grass and weeds. Salt will help this result, and will also hasten the decomposition of the mulch into fine manure. No cultivation is needed or should be allowed save with the hoe, and that on the surface, lest the roots be injured. Plowing among

quince trees, breaking the tender roots and leaving the soil harder than before, is a frequent cause of failure. Mulching and salt will keep the soil in just the right condition."

CULTURE OF THE TUBEROSE.

BY E. W. BUSWELL, BOSTON, MASS.

As the time is upon us for starting in growth tuberose bulbs, for bloom in the holidays, it is thought a few hints, prompted by practical experience, may be acceptable to your readers. This flower, the *Polianthes Tuberosa*, of the botanists, may be, and is cultivated with passable success by being planted out with gladiolus, and other similar roots; but as it is susceptible of being forced so as to give from thirty to forty flowers, why should we content ourselves with half our bulbs blossoming, and they producing only half a dozen small flowers each?

To bring it to its highest condition, a few general principles are to be kept in view. First, the bulbs should be well grown and strong, having nursed but few offsets in their previous growth. Second, they should never feel a colder temperature than forty five degrees Fahrenheit (even in their quiet state), otherwise the bulbs are weakened, which will be shown by the blighting of the flower-buds. Third, (and this applies with more or less force to all vegetation), never allow them to make growth of foliage without having well-established roots. To this end, keep the bulbs, while in a quiet state, in a uniformly dry and warm atmosphere. Fourth, they are *gross feeders*, and being natives of a warm climate, can hardly be pushed too hard after they have begun their growth. This may be considered fundamentally essential to success.

The plan of culture given below I have adopted as best calculated to govern the supply of heat and food, but

it may be varied to suit other circumstances, keeping in view the foregoing general principles.

Divest the bulb of its scales, and with a knife remove all embryo bulbs. Follow this up, during the growth, by splitting them off as soon as they appear above ground. Prepare seven-inch pots by filling one-third with old cow manure gathered in the pasture, broken fine, or its equivalent, and fill up with good, rich compost of equal parts of loam, sand, and well-rotted manure, in which plunge the bulbs nearly to their tips. Of course a space is to be left for watering when growth has commenced. If a hot-bed or other bottom heat is at command, plunge the pots to the rim and cover the plants from the light, for by this, root growth is induced in advance of foliage, *thus securing strength*. Give only sufficient water to preserve moisture until foliage appears, then remove the shade and gradually increase the watering until the blossom stalk begins to spin up, when a full supply should be given. Liquid manure twice a week will not be too high feed for them. But little further care is necessary, except to divest them of offsets, as before directed, until the approach of cold nights, when they should be removed to the conservatory, or other warm quarters. By shading from the sunlight when in full bloom, they, like all other delicate flowers, may be prolonged in their season of beauty. Bloom may be expected in about four months from the time of potting, and such bloom as will well repay all extra care or trouble.

ABUTILON BOULE DE NIEGE is as yet the best white-flowering abutilon in cultivation. It is of dwarf, compact growth, and an abundant bloomer, thus rendering it one of the most desirable of the whole tribe for the decoration of the greenhouse or window garden.

PROTECTING FRUIT TREES FROM MICE.

Please tell me the best means for preserving fruit trees from the ravages of mice. I have suffered from this annoyance more or less every winter, without being able to check their operations, and if you could inform me of a good preventive, I would feel grateful.

ANSWER.—Men are very apt to smile at the studies of the naturalist, as though it were beneath man's dignity to busy himself with noting the habits of such very insignificant things as mice or insects; forgetting that it is in this way we are enabled successfully to protect ourselves from their depredations. Every farmer needs in some sense to be a naturalist, for he is continually exposed to losses from numerous tiny creatures that find their way to his fields, barns and orchard. It is just in this way we find a perfect method of preventing the ravages of mice among young trees. A little study of their habits shows that they will not live where they have nothing with which to protect themselves or in or under which they can build their nests. If then we remove from the orchard everything that can afford them a shelter, we will get rid of the mice. If the orchard be thoroughly and cleanly tilled no grass or weeds allowed to grow in it, no old stumps, logs or the like left for mice to hide under, the links of the fence well cleaned of sods, &c., for the compost heap, there will not a mouse stay in the orchard, not a tree shew the scratch of a tooth. Nor is this all—the trees will be healthier and grow more vigorously, and the cleanings from the fence links, when well rotted, will be an excellent dressing for the trees. We have known of various expedients being resorted to, such as painting the butt of the trees with coal tar, placing a sheet iron hoop around them, or a heap of tan bark.

VALUE OF FRUIT.

It is a fact that fruit is a great regulator of the human system. It will keep the blood in order, the bowels regular, tone up the stomach, and is positively a specific in many diseases. It is said of a doctor who became largely interested in peach growing, that he recommended peaches to his patients on all occasions. The story was told to illustrate the man's meanness; but if he was mean it was a meanness that benefited his patients. If men were wise they would spend two days in a vineyard or orchard to every five minutes in a drug-store when anything is the matter with them. If you have dyspepsia, eat fruit. Did you ever think what a doctor gives for dyspepsia? He gives an acid. Fruit will furnish a better acid than the drug-store will. Do you know what the doctors dose you with when your liver is out of order? With acids. Then why not supply the remedy yourself from your own garden? Why continue to have your medicine done up in such a repulsive mixture when nature furnishes it in so palatable a shape. Every home should have at least one grape-vine. Once in possession it would be almost above price.—*Western Farmer*.

WASTE OF LAND IN FENCES.

If a farm of 160 acres is divided by fences into fields of ten acres each, there are five miles of fence. If each fence row is one rod wide, no less than ten acres of land are occupied by them. This is equal to $6\frac{1}{4}$ per cent. of the farm, and the loss of use of the land is exactly equal to a charge of $6\frac{1}{4}$ per cent. on the whole value of the farm. But nearly every fence row in the country is made a nursery for weeds which stock the whole farm, and make an immense amount of labor necessary to keep them from smothering the crops. Much

damage always results to the crops from these weeds, and if these expenses are added to the first one, the whole will easily sum up to 20 per cent., or a tax of one-fifth of the value of the farm. To remedy this we would have fewer fences, or we would clean and sow down the fence rows to grass or clover, and mow them twice a year. Ten acres of clover or timothy would at least supply a farm with seed and a few tons of hay every year. We would, in short, consider the fence rows as a valuable part of the farm and use them as such.—*Dieie Farmer.*

CARE OF PLANTS IN WINTER.

All roots of ornamental and flowering plants that are kept dry over the winter should be thoroughly ripened during the autumn. If frost overtakes them they should be dug up with earth adhering to them and placed in a light cellar, or other place secure from frost to thoroughly ripen up and dry. Then keep in a cool, dry place until they are wanted for starting in the spring. This will apply to cannas, caladiums, dahlias, gladiolus, and all other plants of that class.

Tuberose, begonias, and that class requiring to be kept simply dormant for a time, should have the water gradually withheld, in the autumn, and be gradually allowed to get dry, after the close of the flowering season. About February they may be again started by shaking the soil from the roots and re-potting.

Tender shrubs, like fuschia, oleander, orange, tender roses, and all that class may be successfully wintered in a light cellar that does not absolutely freeze. They should have but little water, only sufficient to compensate for the actual loss by evaporation. In fact the soil should always be kept dry rather than moist, the moisture never approaching

the state of wetness during the winter rest.

SEEDLING POTATOES

For years past nothing in the way of novelties has met with readier sale than new potatoes. The usual price when first introduced is one dollar the pound, and in one case at least as high as four dollars per pound were paid last season. Farmers might just as well raise their own potatoes from seeds, and thus at very much less expense provide new and valuable kinds for themselves.

March 15th, planted seeds of the English Magnum Bonum in a flower pot 10 inches in diameter. The seeds germinated as readily as tomato seeds would, so that by April 9th, they were ready to be transplanted to little pots three inches in diameter. On May 20th, a small plot of soil was prepared and enriched with concentrated potato fertilizer at the rate of 500 pounds to the acre. The plants were thumped out of the little pots, being very careful to preserve the ball of earth and roots intact, and set a foot apart in rows—the rows three feet apart. No check to the growth was sustained, and, if we would secure tubers of the largest size the *first* season from seed, this is all-important. If from becoming pot-bound or too dry, the little tubers cease to grow, that is the end of *their* enlargement. New tubers have to form, while those first formed become knobby or sprout again and decay. Potato seeds may be sown out of doors in the Spring when settled weather has arrived. But they make comparatively little growth of vine, and the average of tubers will be no larger than small marbles. Besides, potato beetles have to be watched very closely or the tender little plants will soon be destroyed. Even a few hours of neglect may destroy every one.—*Rural New Yorker.*

THE PRENTISS GRAPE.

We have recently had an opportunity of testing the quality of this white grape more fully than ever before, and confess that it stands the test well. In quality it will rank among the best of hardy out-door white grapes. It is a medium bunch, and a medium sized berry; in color (like all white grapes) of a greenish white with a slight tinge of amber. The bunch is very compact, nearly as compact as the Delaware, the berries adhere well to the stem; the skin is tough, the pulp soft, with a sweet, aromatic flavor. We should think it would keep well and ship well.

As for the hardiness, vigor, and productiveness of the vine and the healthiness of leaf and fruit, we know nothing from observation, but Mr. T. S. Hubbard publishes numerous testimonials from those who have grown the vines, some of whom are well known to the horticultural public, and they speak highly of its qualities in those respects. It is certainly a cause of congratulation that, whereas a few years since we had no white grape that we could rely on, now we have quite a respectable list of those that are decidedly promising, if not of established reputation.—*American Rural Home*.

DAMSON DYE.

W. T. Harding, of New Jersey, writing to the *Gardener's Monthly* from Staffordshire, England, giving account of a visit to a farmer, says:

"I noticed an additional orchard of damsons, several acres in extent, that had recently been planted, and to my query, Why so many? was informed that they were not intended for culinary purposes, but to supply a new demand of the arts, and for which they were immensely profitable.

"Now, here was something new under the sun, as the sequel will pre-

sently show. As I had hitherto looked upon the domestic damson as one of the most useful and palatable fruits eaten, either in a natural state, preserved, or otherwise prepared, I felt astonished at the assertion. As damson pudding and pie had been one of the gustatory delights of my youthful days, and for which I sometimes feel a yearning now, I was at a loss to know what other art, save that of mastication, could find a use for damsons. But, good reader, be not amazed when the secret is divulged, as it was told to me, they were intended for dyes instead of pies. 'The fact is this,' said my friend, 'I last year sold nearly all my damson crop which realized £50, or \$250, to parties who, in the season, go about the country, buying up all the ripe fruit they can find for dyeing purposes.'"—*Rural Home*.

MANAGEMENT OF THE CANES AND BUSHES OF THE SMALL FRUITS.

Two years ago I read in some paper an article from an experienced writer, who pretended to know all about this. He said that only three or four canes should be left to grow and bear fruit from blackberries, raspberries, currants, and gooseberries. This may do very well in a clay or quite rich loam; but it does not answer at all for a poor, sandy, or fine gravelly soil, except in the case of blackberries, and even these had best be left with half-a-dozen canes to grow up together. For years I had left from eight to twelve canes to grow up in bushes of all the above, except the blackberries, and they bore fruit abundantly, and of fully medium size. After reading what this writer had to say on the subject, and being desirous to increase the size of my berries, I adopted his recommendation of only letting three to four canes stand together. The result is that several of the bushes died, and not one bears as

many or as large berries in proportion to the canes left as they did before, so I shall go back after this unfortunate experiment to my former method.

The canes should be pinched off at the height of two or three feet, according to the soil and the sort of raspberry grown; but blackberries may be left three to four feet long. Let the currants and gooseberries grow as high as they will. By keeping the canes so short they do not require staking, and by having so many grow together they shade the ground, and add to its moisture and coolness, which are essential to prevent injury from a hot sun.—A. B. ALLEN, in *Rural New Yorker*.

INSECTS AS TALKERS.

"Two ants," says Buchner, "when they are talking together, stand with their heads opposite to each other, working their sensitive feelers in the liveliest manner, and tapping each other's head." Numerous examples prove that they are able in this way to make mutual communications and even on definite subjects. "I have often," says the English naturalist Jesse, "placed a small green caterpillar in the neighborhood of an ant's nest. It is immediately seized by an ant, which calls in the assistance of a friend after ineffectual efforts to drag the caterpillar into the nest. It can be easily seen that the little creatures hold a conversation by means of their feelers, and this being ended, they repair together to the caterpillar in order to draw it into the nest by their united strength. Further, I have observed the meeting of ants on their way to and from their nests. They stop, touch each other with their feelers, and appear to hold a conversation, which, I have good reason to suppose, refers to the best ground for food." Hague writes a letter to Darwin that he one day killed with

his fingers a number of ants who came every day from a hole in the wall to some plants standing on the chimney-piece. He had tried the effect of brushing them away, but it was of no use, and the consequence of the slaughter was that the ants who were on their way immediately turned back and tried to persuade their companions, who were not yet aware of the danger, to turn back also. A short conversation ensued between the ants, which, however, did not result in an immediate return, for those who had just left the nest convinced themselves of the truth of the report.

THE YEAR'S RAISIN CROP.

Some weeks ago a commercial paper of this city roughly estimated the raisin crop of California, 1881, at 91,000 boxes. The *Riverside* (San Bernardino) *Press*, of a later date, corrects this estimate as follows:

	Boxes.
Produced at Briggs'.....	65,000
" by Blower.....	9,000
" at Rocklin.....	12,000
" in Fresno county....	8,000
" at Riverside.....	27,000
" at Orange.....	10,000
" other places.....	20,000

Total 151,000

The *Press* is located in the heart of a raisin district, and has means of obtaining correct information on the subject. From its figures the value of the raisin crop of the State this year will reach half a million dollars. The progress of this industry has been remarkable. In the reports of 1878 the Assessors made no mention of it. At least none is made in the embodiment of their reports in the report of the State Surveyor-General, dated 1879. It now reaches the grand aggregate of half a million, and this will probably be doubled next year, if no unforeseen accident happens to the Grape crop in

the raisin districts. The one great advantage of the business is that to produce a crop worth \$500,000, not more than 1,200 to 1,500 acres of land is required. In some favored localities, as at the Riverside, as high as \$700 to \$800 per acre has been realized. To produce the aggregate value of \$500,000 in wheat at \$1 per bushel, with the high average of 20 bushels per acre, 25,000 acres of first-class land must be planted and well cultivated. — *San Francisco Chronicle*.

ENGLISH SPARROWS.

At the Michigan horticultural meeting several fruit growers told us that the English sparrows were rapidly bringing grief to the farmers and fruit growers. It was the old story of destructiveness and fighting propensities. And now we notice in an exchange that at Mt. Vernon, Ill., a gentleman had twenty acres in wheat, from which he expected a fourth of a crop, the heads having every appearance of promising such a yield. He resolved to cut it for seed, and sent some persons to gather it. They returned soon after and said that there was not a grain of wheat in the field, the sparrows having eaten the entire crop. — *Prairie Farmer*.

THE HADIEST BLACK CAP RASPBERRY. —The black raspberry known as the Seneca Black-cap, we have found, from years of experience, to be the hardiest—able to withstand the most cold—of any of the named varieties we have seen in cultivation. Its fruit is of medium size and of excellent flavor, and the plant is very productive and adapted to a great range of soils. — *Prairie Farmer*.

LYONNAISE POTATOES. —One quart of cold boiled potatoes cut into dice, three tablespoonfuls of butter, one of chopped onion, one of chopped parsley, salt, pepper. Season the potatoes with the salt and pepper. Fry the onions in the butter, and when they turn yellow add the potatoes. Stir with a fork, being careful not to break them. When hot, add the parsley, and cook two minutes longer. Serve immediately on a hot dish.

THE PEACH BORER. —The perfect insect of the *Ageria Exitiosa* or peach borer, somewhat resembling the wasp, lays its eggs in June at the base of the tree, which in a few days hatch, and the grub enters the bark and lives on it till September or later, and then enters on its chrysalis state, preparatory to appearing again the next spring. If your trees are already infested, dig the pests out—make thorough work. If you are not quite sure that you have captured them all, pour boiling water around the roots. If in May of each year you make a mound of earth round each tree, and in October remove it, you will be no longer troubled with the insect. — *Rural New Yorker*.

WILDER. —Another grape that is gaining space in vineyards and in our markets is the Wilder (Rogers No. 4). Mr. McLean, a produce dealer of this city, is receiving considerable quantities of this, as well as of other varieties, from Mr. De Los Tenney, of North Parma, who finds it quite a profitable variety to grow. It is the largest black grape grown in the open air, and makes a fine show in market. It has a thick skin, a soft pulp, considerable aroma, but is a little deficient in sugar. Still the public taste would be very well satisfied with it, and we have no doubt that it will pay to grow it in most localities. Among its other merits it is a long keeper. — *Rural Home*.

RASPBERRY PROFITS. —Mr. Parry, who has long been a very successful grower of the raspberry, gave the New Jersey Horticultural Society a statement of some of the large profits obtained when the fruit sold at high prices. He said the best American varieties, with fair treatment, will yield as many bushels per acre as corn, and generally bring five times as much in market, and, when once planted, remain for several years. A neighbor of his sent to market a one-horse waggon load of red raspberries, and received \$220 for the lot. A lady living near him rented out her farm, reserving a portion for a raspberry and blackberry plantation, from which she sold one year 43,000 quarts of berries, worth, at 8 cents a quart, \$3,440, which was more than the tenant made from all the other crops on the farm. — *Country Gentleman*.

WEEDS.

I like these plants that you call weeds—
Sedge, hardhack, mullein, yarrow—
That knit their roots, and sift their seeds
Where any grassy wheel-track leads
Through country by-ways narrow.

They fringe the rugged hillside farms,
Grown old with cultivation,
With such wild wreath of rustic charms
As bloomed in Nature's matron arms
The first day of creation.

They show how Mother Earth loves best
To deck her tired-out places;
By flowery lips, in hours of rest,
Against hard work she will protest
With homely airs and graces.

You plow the arbutus from her hills;
Hew down her mountain-laurel;
Their place, as best she can, she fills
With humbler blossoms; so she wills
To close with you her quarrel.

She yielded to your axe, with pain,
Her free, primeval glory;
She brought you crops of golden grain;
You say, "How dull she grows! how plain!"—
The old, mean, selfish story.

Her wildwood soil you may subdue,
Tortured by hoe and harrow;
But leave her for a year or two,
And see—she stands and laughs at you
With hardhack, mullein, yarrow.

Dear Earth, the world is hard to please!
Yet heaven's breath gently passes
Into the life of flowers like these;
And I lie down at blessed ease
Among thy weeds and grasses.

LUCY LARCOM.

DOMESTIC RECIPES.

(From the Ladies' Floral Cabinet.)

LEMON PIE.—Yolks of three eggs beaten well, to which add one full cup of sugar, the juice and part of the grated rind of one lemon, and one tablespoon of flour. When the crust is ready, add to the other ingredients enough sweet milk or cream as will be necessary to fill the pie-tin, and bake in a hot oven. As soon as the custard is fairly set and the crust done, spread over the top the whites of the eggs, previously beaten stiff with a little sugar, and return to the oven to brown a trifle.—A. L. T.

PICKLED PEACHES.—For peaches enough to fill a three-gallon crock, take two quarts of strong cider vinegar, four pounds of brown sugar, plenty of stick cinnamon. Rub the peaches until all the fuzz is off, stick four cloves in each peach, unless the peaches are small, then three will be suffi-

cient. Boil the vinegar, sugar and cinnamon, and when it has been skimmed put in half the peaches and boil them till they feel a little soft, then take them out carefully, put them in the crock and boil the rest, then put them in the crock, and boil down the vinegar till there is just enough to cover them. Put a plate over them to keep them from swimming, and when cool paste brown paper over the crock to keep out little flies, and keep from the air till cool weather.—G. C. F.

HIGDOM.—Not quite as many green peppers as green tomatoes, and about one-quarter as many white onions. Chop the tomatoes very fine, salt them and let them stand twelve or twenty-four hours, then squeeze out every particle of juice; put them in a porcelain kettle with cold water enough to cover them and heat scalding hot; when cool enough, squeeze every particle of water out. Chop the peppers and onions separately, and boil separately in salted water until nearly soft, then squeeze the juice out and mix with the tomatoes thoroughly. Now boil all together in vinegar and water until soft, then they may stand a day or two, or more if convenient, or they may be squeezed out immediately. Put the amount of sugar you wish to use, plenty of white mustard seed (one-half pound to one peck of tomatoes), a little cloves and cinnamon in some strong vinegar, heat it and pour it over the higdom, and when it is all boiling hot, it is done and ready to put away, in crocks or large-mouthed bottles. If put into bottles corked, and sealing wax poured over the corks, it will keep the year round. There should be vinegar enough to make it thoroughly moist and a little juicy.—A. L. T.

DAHLIA COCCINEA.—As single flowering dahlias are attracting considerable attention at the present time, I would call attention to *D. coccinea*, a very distinct and profuse-flowering species; the flowers are freely produced from June until frost, and are of a deep crimson color, with a bright yellow disc. The plant grows from two-and-a-half to three feet in height and requires a treatment similar to that given other dahlias.—*Rural New Yorker*.





